

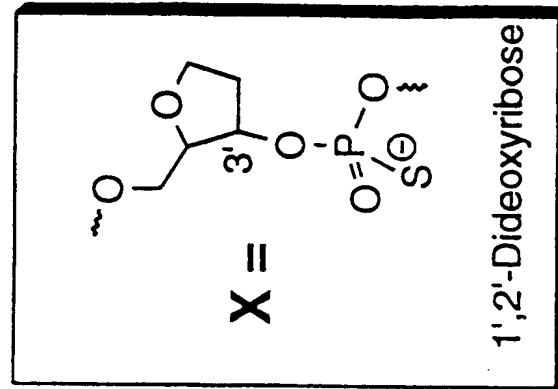
#3

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

*Oligo No.*      *Sequence & Modification*

SEQ ID NO.: 8	8	5'-CCTACTAG <u>C</u> GTTCTCATC-3' (133-1)
SEQ ID NO.: 9	9	5'-CCTACTAG <u>CX</u> TTCTCATC-3' (139-2)
SEQ ID NO.: 10	10	5'-CCTACTAX <u>C</u> GTTCTCATC-3' (133-2)
SEQ ID NO.: 11	11	5'-CCTACTX <u>G</u> GTTCTCATC-3' (139-3)
SEQ ID NO.: 12	12	5'-CCTAC <u>X</u> AGCGTTCTCATC-3' (133-3)
SEQ ID NO.: 13	13	5'-CCTAX <u>T</u> AGCGTTCTCATC-3' (139-4)
SEQ ID NO.: 14	14	5'-CCT <u>X</u> TAGCGTTCTCATC-3' (133-4)
SEQ ID NO.: 15	15	5'-CCT <u>X</u> CTAG <u>C</u> TTCTCATC-3' (145-10a)
SEQ ID NO.: 16	16	5'-CCTACTAG <u>C</u> GXTCTCATC-3' (133-5)
SEQ ID NO.: 17	17	5'-CCTACTAGCGTX <u>C</u> TCATC-3' (139-7)
SEQ ID NO.: 18	18	5'-CCTACTAGCGTT <u>X</u> TCATC-3' (133-6)
SEQ ID NO.: 19	19	5'-CCTACTAGCGTT <u>CX</u> TCATC-3' (139-8)
SEQ ID NO.: 20	20	5'-CCT <u>XX</u> XTAGCGTTCTCATC-3' (133-12)
SEQ ID NO.: 21	21	5'-XXTACTAGCGTTCTCATC-3' (139-6)
SEQ ID NO.: 22	22	5'-CCTACTAGCGTT <u>CXX</u> TCATC-3' (139-9)
SEQ ID NO.: 23	23	5'-CCTXCTX <u>G</u> GTTCTCATC-3' (145-10b)

FIG. 1A



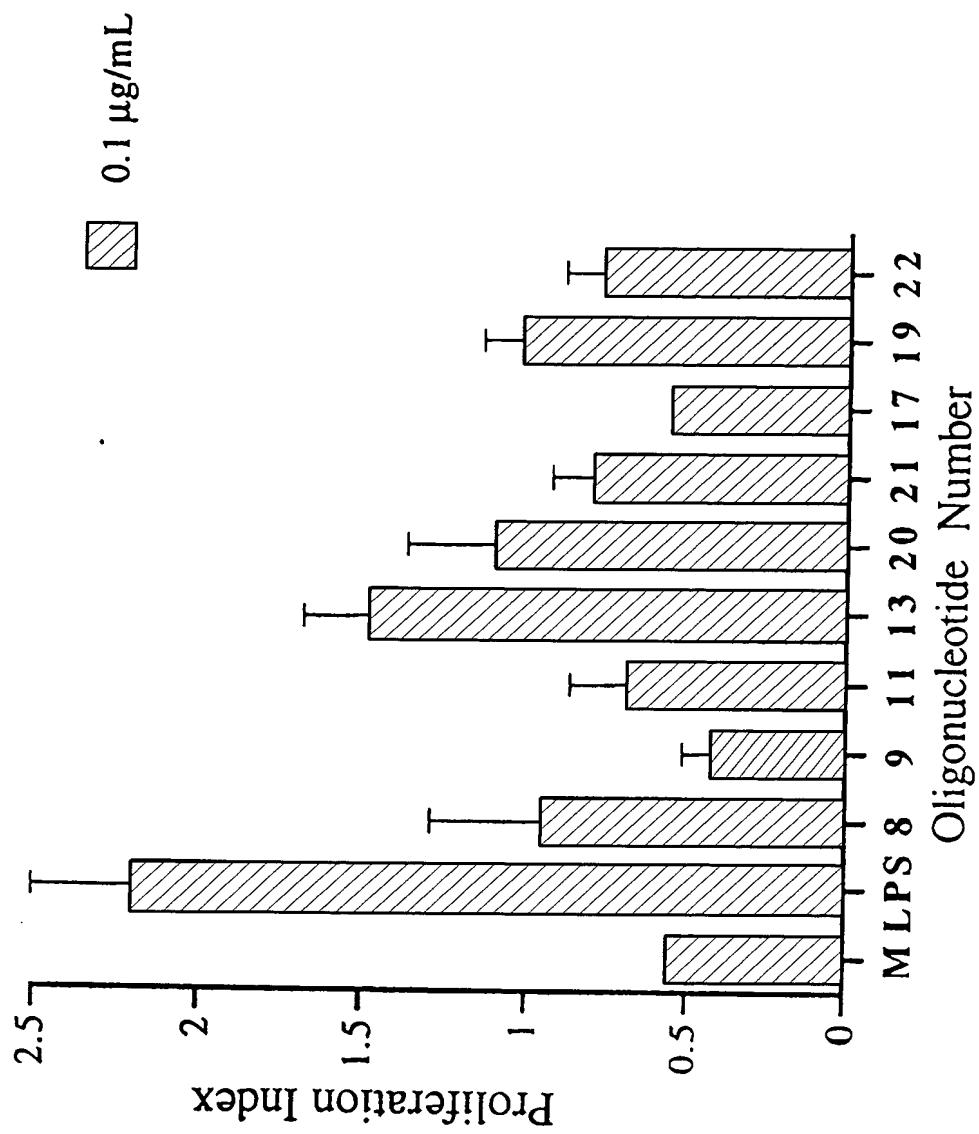


FIG. 1B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

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Oligo No.	Sequence & Modification
SEQ ID NO.: 8	8 5'-CCTACTAG <u>G</u> GTTCATC-3' (133-1)
SEQ ID NO.: 9	9 5'-CCTACTAGCX <u>T</u> TCATC-3' (139-2)
SEQ ID NO.: 10	10 5'-CCTACTAXCG <u>T</u> TCATC-3' (133-2)
SEQ ID NO.: 11	11 5'-CCTACTX <u>G</u> GTTCTCATC-3' (139-3)
SEQ ID NO.: 12	12 5'-CCTAC <u>X</u> AGCG <u>T</u> TCATC-3' (133-3)
SEQ ID NO.: 13	13 5'-CCTAXTAG <u>G</u> GTTCTCATC-3' (139-4)
SEQ ID NO.: 14	14 5'-CCT <u>X</u> CTAGCG <u>T</u> TCATC-3' (133-4)
SEQ ID NO.: 15	15 5'-CCT <u>X</u> CTAG <u>G</u> GTTCATC-3' (145-10a)
SEQ ID NO.: 16	16 5'-CCTACTAGCG <u>X</u> TCATC-3' (133-5)
SEQ ID NO.: 17	17 5'-CCTACTAGCG <u>T</u> TCATC-3' (139-7)
SEQ ID NO.: 18	18 5'-CCTACTAGCG <u>T</u> TCATC-3' (133-6)
SEQ ID NO.: 19	19 5'-CCTACTAGCG <u>T</u> TCATC-3' (139-8)
SEQ ID NO.: 20	20 5'-CCT <u>X</u> XTAGCG <u>T</u> TCATC-3' (133-12)
SEQ ID NO.: 21	21 5'-XXTACTAGCG <u>T</u> TCATC-3' (139-6)
SEQ ID NO.: 22	22 5'-CCTACTAGCG <u>T</u> TCXXATC-3' (139-9)
SEQ ID NO.: 23	23 5'-CCTXCTX <u>G</u> G <u>T</u> TCATC-3' (145-10b)

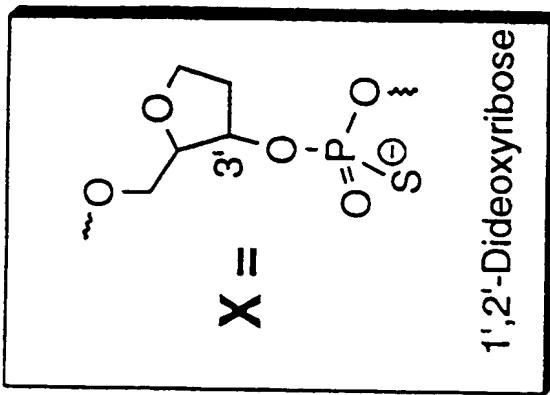


FIG. 2A

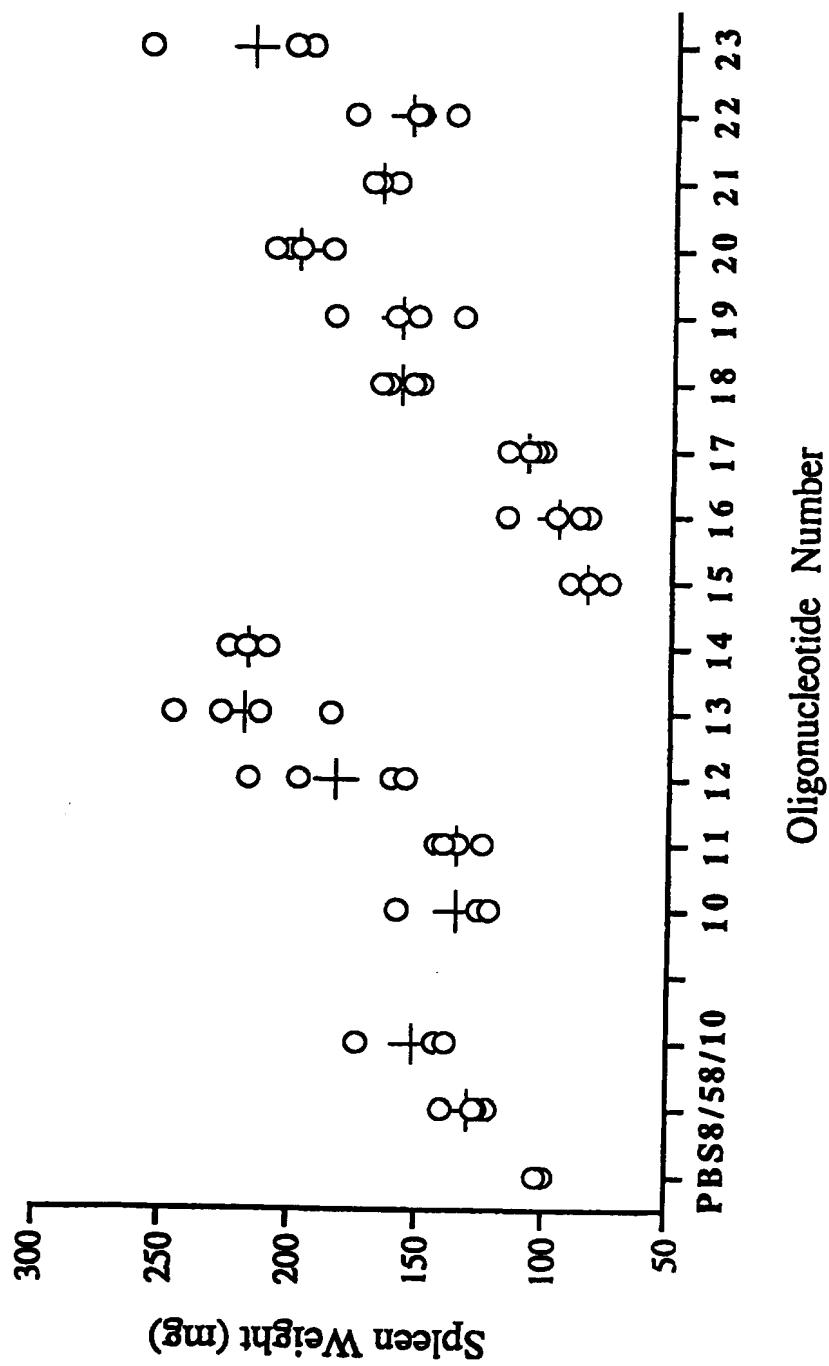


FIG. 2B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCT <u>GACG</u> TTCTGT-3' (131-1)
SEQ ID NO.: 105	5'-CTATCTGAXGTTCTGT-3' (131-13)
SEQ ID NO.: 106	5'-CTATCTGXGACGTTCTGT-3' (131-2)
SEQ ID NO.: 107	5'-CTATCXGACGTTCTGT-3' (131-3)
SEQ ID NO.: 108	5'-CTAXCTGACGTTCTGT-3' (131-4)
SEQ ID NO.: 109	5'-CTATCTGACGXCTCTGT-3' (131-5)
SEQ ID NO.: 110	5'-CTATCTGACGTTCTGT-3' (131-6)

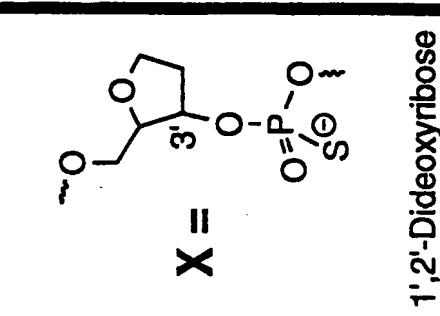
  
 $X = \begin{array}{c} \text{O} \\ \text{---} \\ \text{C} \\ \text{---} \\ \text{O} \end{array}$   
 1',2'-Dideoxyribose

FIG. 3A

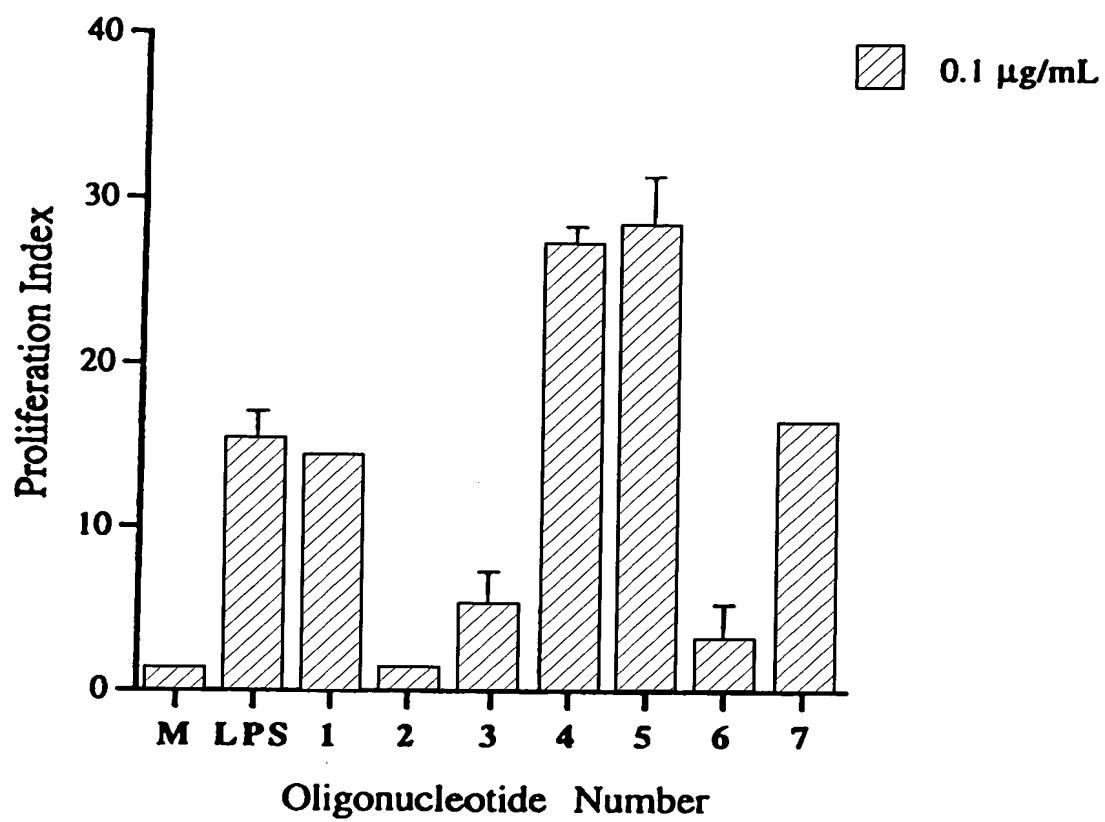


FIG. 3B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGAC <u>G</u> TCTCTGT-3' (131-1)
SEQ ID NO.: 105	5'-CTATCTGAX <u>G</u> TCTCTGT-3' (131-13)
SEQ ID NO.: 106	5'-CTATCTGX <u>G</u> TCTCTGT-3' (131-2)
SEQ ID NO.: 107	5'-CTATCX <u>G</u> ACGTTCTCTGT-3' (131-3)
SEQ ID NO.: 108	5'-CTAX <u>G</u> TCACGTTCTCTGT-3' (131-4)
SEQ ID NO.: 109	5'-CTATCTGAC <u>G</u> XTCTGT-3' (131-5)
SEQ ID NO.: 110	5'-CTATCTGAC <u>G</u> TTXTCTGT-3' (131-6)

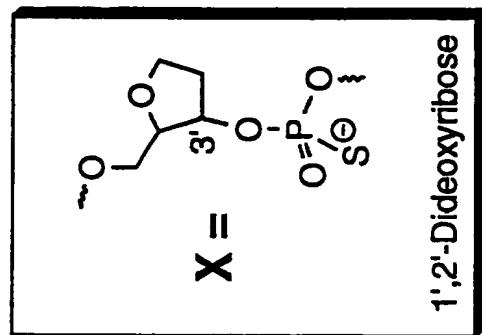


FIG. 4A

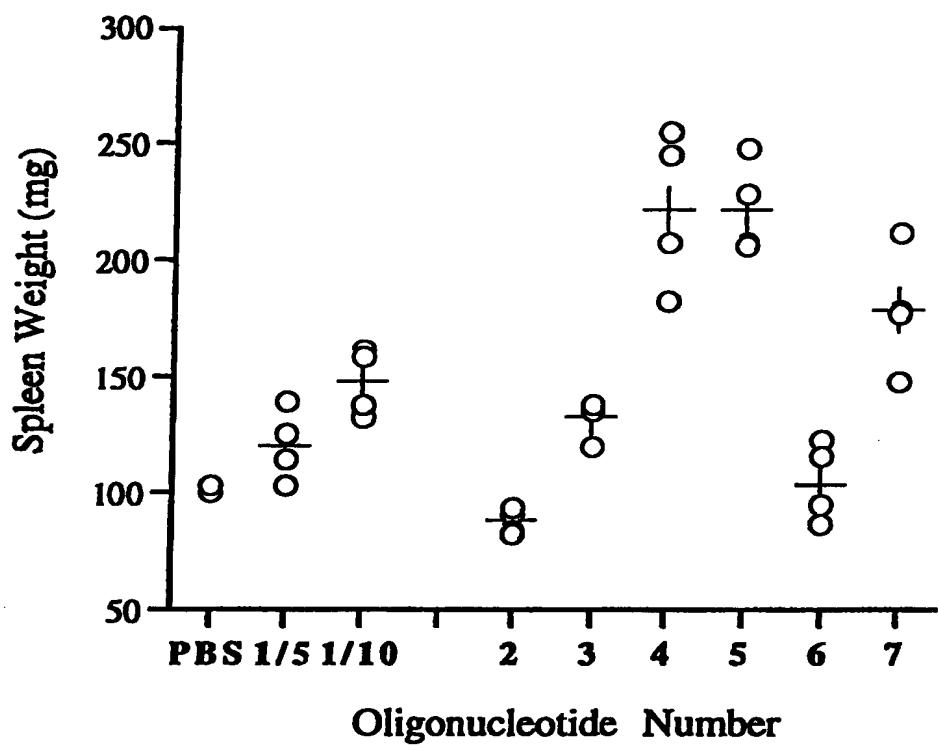


FIG. 4B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 8	133-1 5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 24	141-2 5'-CCTACTAGCXTTCTCATC-3'
SEQ ID NO.: 25	141-3 5'-CCTACTXGGTTCTCATC-3'
SEQ ID NO.: 26	141-4 5'-CCTAXTAGCGTTCTCATC-3'
SEQ ID NO.: 27	141-5 5'-CCTXTAGCGTTCTCATC-3'
SEQ ID NO.: 28	141-6 5'-XXTACTAGCGTTCTCATC-3'
SEQ ID NO.: 29	141-7 5'-CCTACTAGCGTXCTCATC-3'
SEQ ID NO.: 30	141-8 5'-CCTACTAGCGTTCXCATC-3'
SEQ ID NO.: 31	141-9 5'-CCTACTAGCGTTCXATC-3'
SEQ ID NO.: 1	131-1 5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 32	137-2 5'-CTATCTGXCGTTCTCTGT-3'
SEQ ID NO.: 33	137-3 5'-CTATCXGACGTTCTCTGT-3'
SEQ ID NO.: 34	137-4 5'-CTAXCTGACGTTCTCTGT-3'

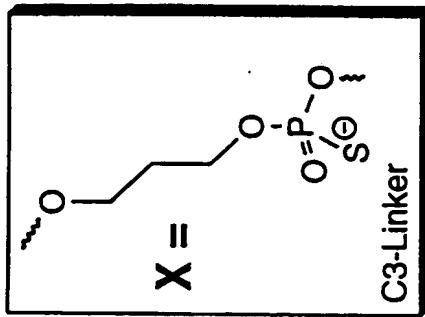


FIG. 5A

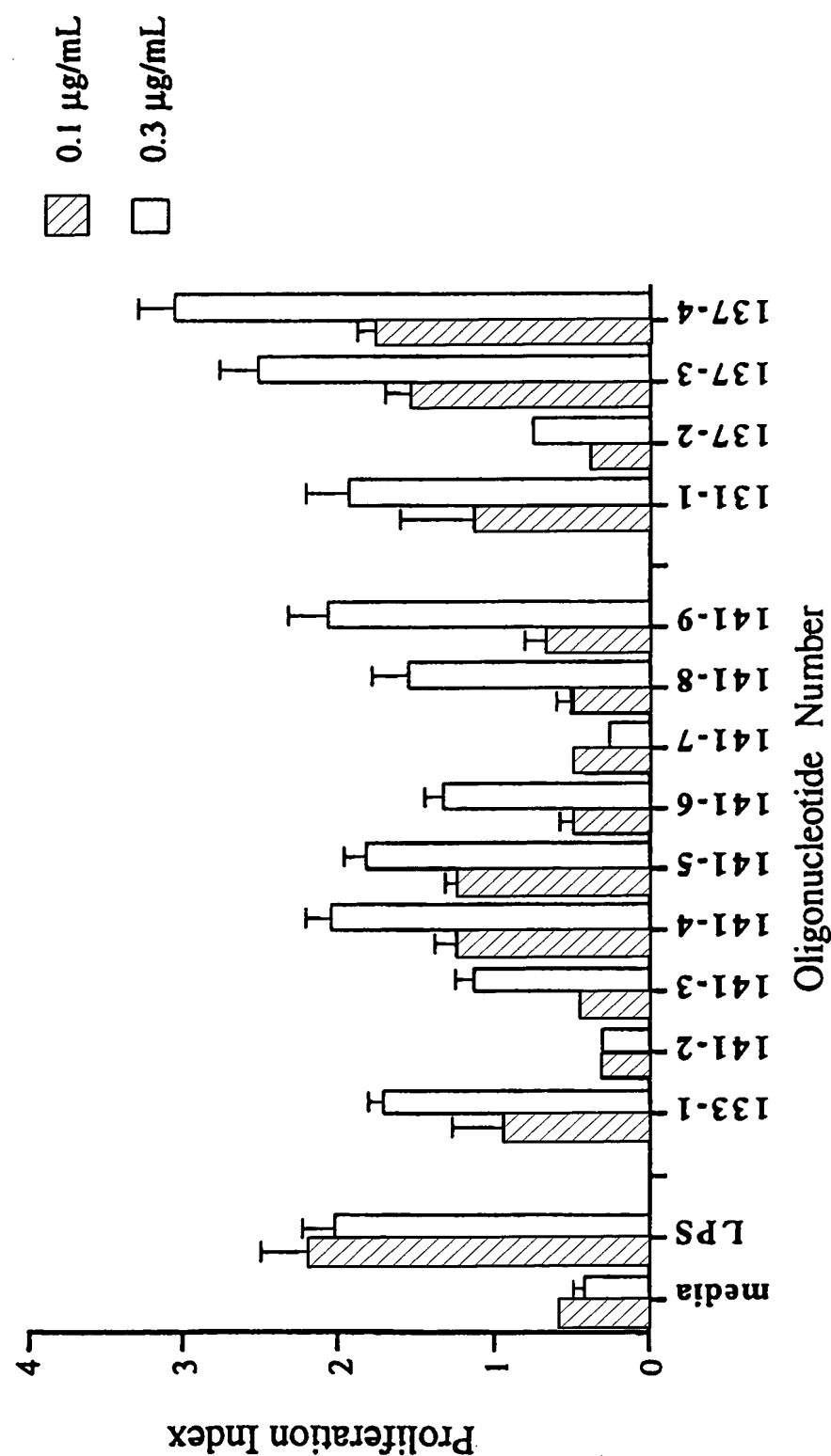


FIG. 5B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 8	133-1
SEQ ID NO.: 24	141-2
SEQ ID NO.: 25	141-3
SEQ ID NO.: 26	141-4
SEQ ID NO.: 27	141-5
SEQ ID NO.: 28	141-6
SEQ ID NO.: 29	141-7
SEQ ID NO.: 30	141-8
SEQ ID NO.: 31	141-9
SEQ ID NO.: 1	131-1
SEQ ID NO.: 32	137-2
SEQ ID NO.: 33	137-3
SEQ ID NO.: 34	137-4

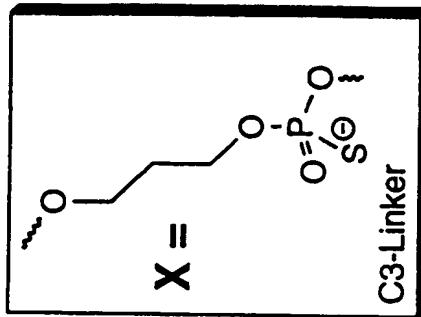


FIG. 6A

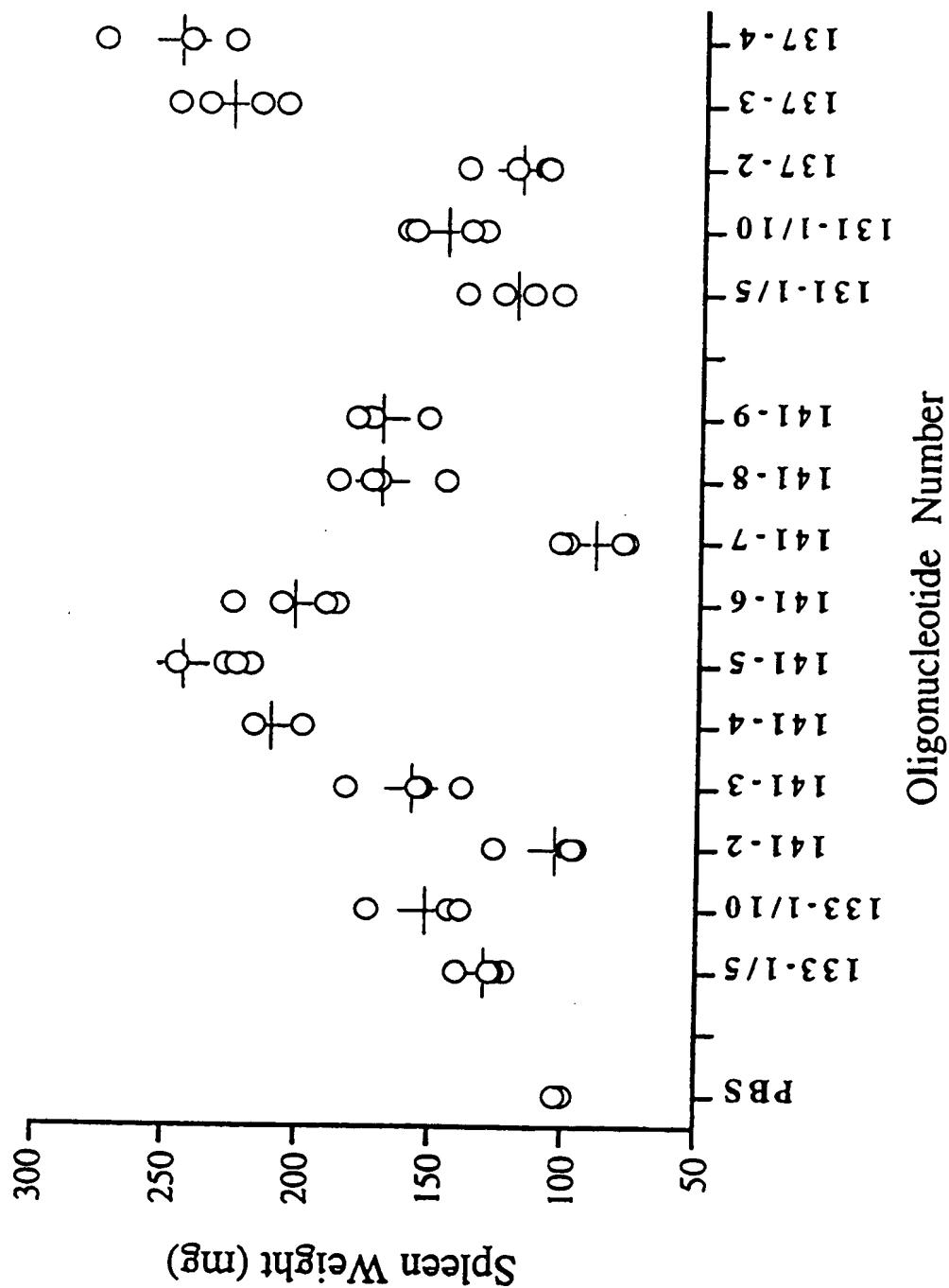


FIG. 6B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGAC <u>GT</u> TCTCTGT-3' (131-1)
SEQ ID NO.: 35	5'-CTAXCTGACGTTCTCTGT-3' (153-1)
SEQ ID NO.: 36	5'-CTATCTGACGTT <u>CX</u> CTGT-3' (153-2)
SEQ ID NO.: 37	5'-CTAYCTGACGTTCTCTGT-3' (153-3)
SEQ ID NO.: 38	5'-CTATCTGACGTT <u>CY</u> CTGT-3' (153-4)
SEQ ID NO.: 8	5'-CCTACTAGCGTTCTCATC-3' (133-1)
SEQ ID NO.: 39	5'-CCT <u>X</u> CTAGCGTTCTCATC-3' (155-1)
SEQ ID NO.: 40	5'-CCTACTAGCGTT <u>CX</u> CATC-3' (155-2)
SEQ ID NO.: 41	5'-CCT <u>Y</u> CTAGCGTTCTCATC-3' (155-3)
SEQ ID NO.: 42	5'-CCTACTAGCGTT <u>CY</u> CATC-3' (155-4)

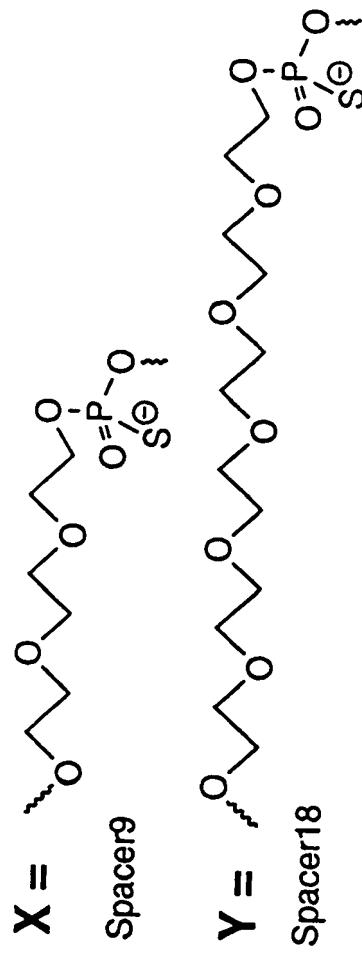


FIG. 7A

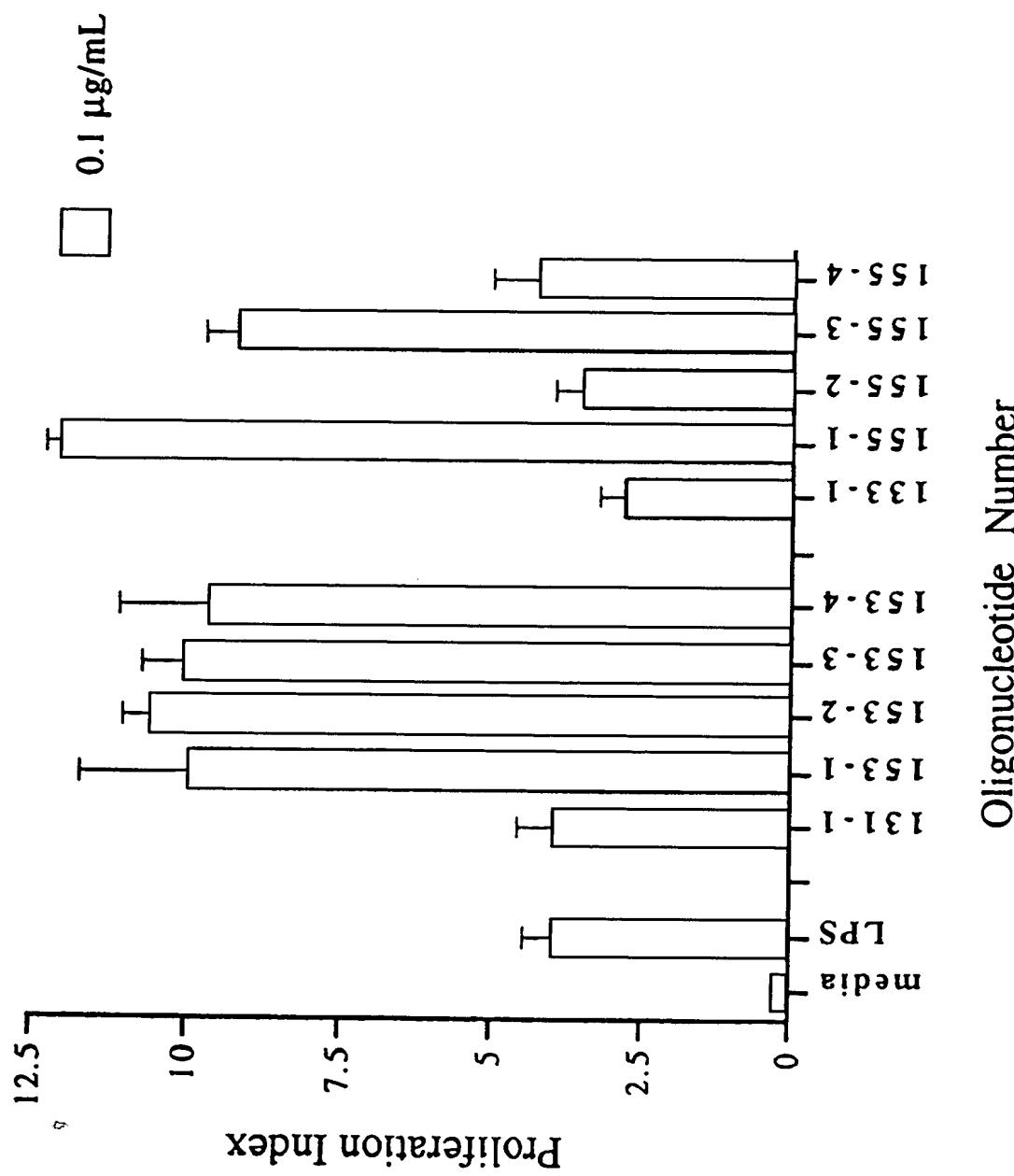


FIG. 7B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGAC <u>G</u> TTCTCTGT-3' (131-1)
SEQ ID NO.: 35	5'-CTAXCTGACGTTCTCTGT-3' (153-1)
SEQ ID NO.: 36	5'-CTATCTGACGTT <u>C</u> XTCTGT-3' (153-2)
SEQ ID NO.: 37	5'-CTAYCTGACGTTCTCTGT-3' (153-3)
SEQ ID NO.: 38	5'-CTATCTGACGTT <u>C</u> YCTGT-3' (153-4)
SEQ ID NO.: 8	5'-CCTACTAGCGTTCTCATC-3' (133-1)
SEQ ID NO.: 39	5'-CCTXCTAGCGTTCTCATC-3' (155-1)
SEQ ID NO.: 40	5'-CCTACTAGCGTT <u>C</u> XCATC-3' (155-2)
SEQ ID NO.: 41	5'-CCTYCTAGCGTTCTCATC-3' (155-3)
SEQ ID NO.: 42	5'-CCTACTAGCGTT <u>C</u> YCATC-3' (155-4)

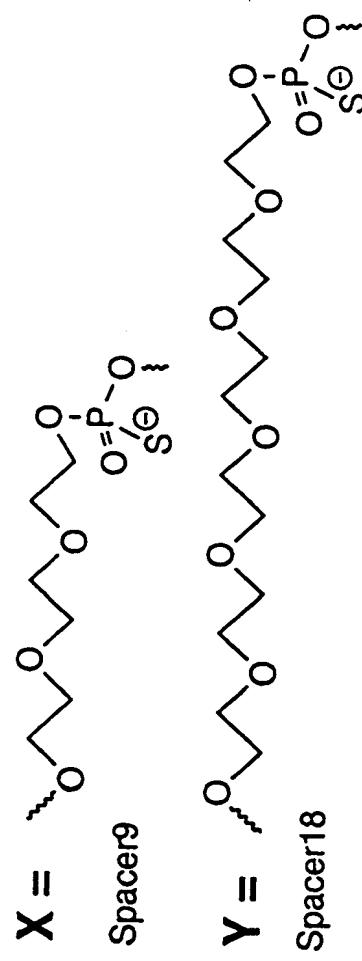


FIG. 8A

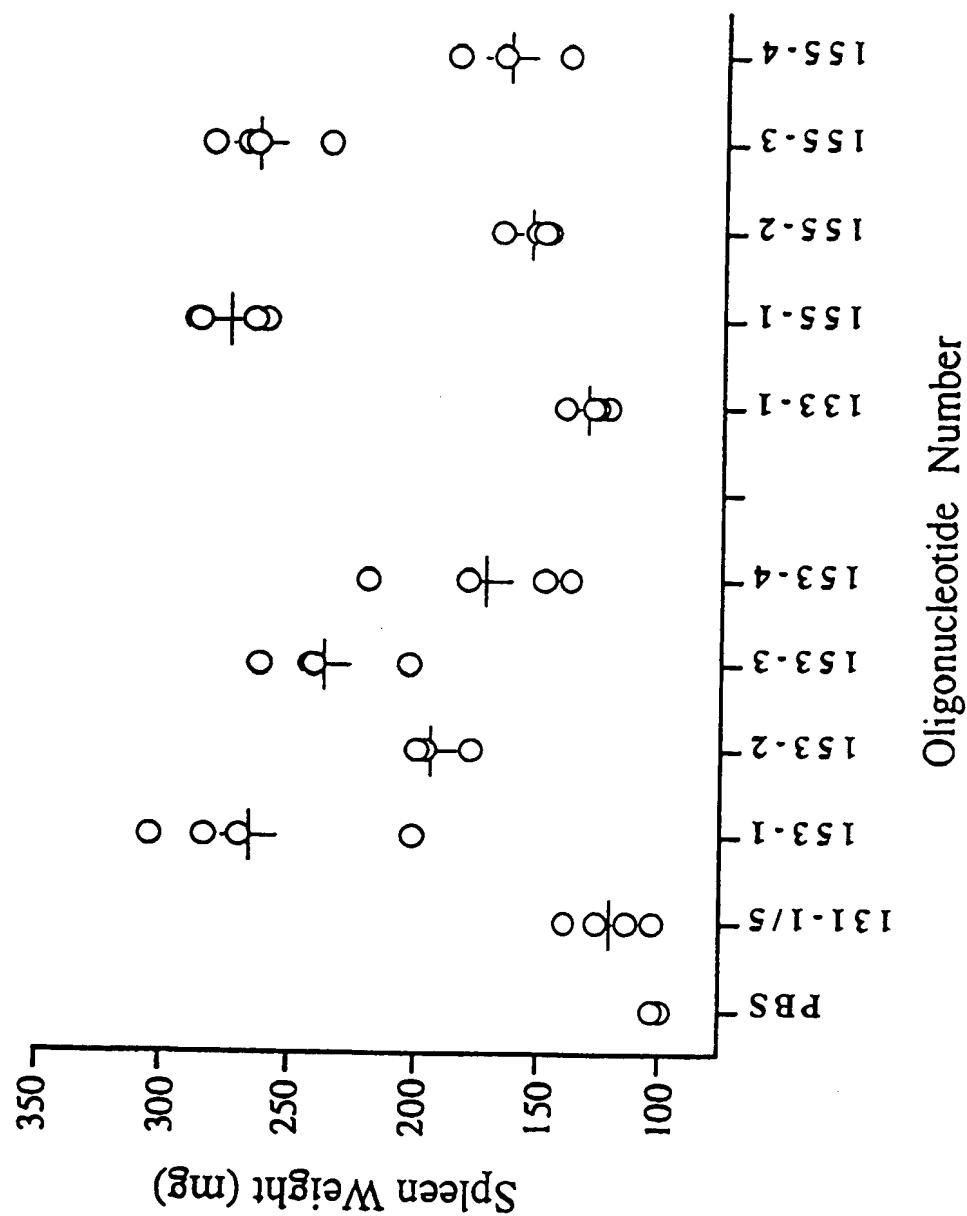


FIG. 8B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGACGTTCTCTGT-3' (131-1)
SEQ ID NO.: 43	5'-CTATCTGXCGTTCTCTGT-3' (157-1)
SEQ ID NO.: 44	5'-CTATCTXACGTTCTCTGT-3' (157-2)
SEQ ID NO.: 45	5'-CTAXCTGACGTTCTCTGT-3' (157-3)
SEQ ID NO.: 46	5'-CTATCTGACGTXCTCTGT-3' (157-4)
SEQ ID NO.: 47	5'-CTATCTGACGTTCXCTGT-3' (157-5)

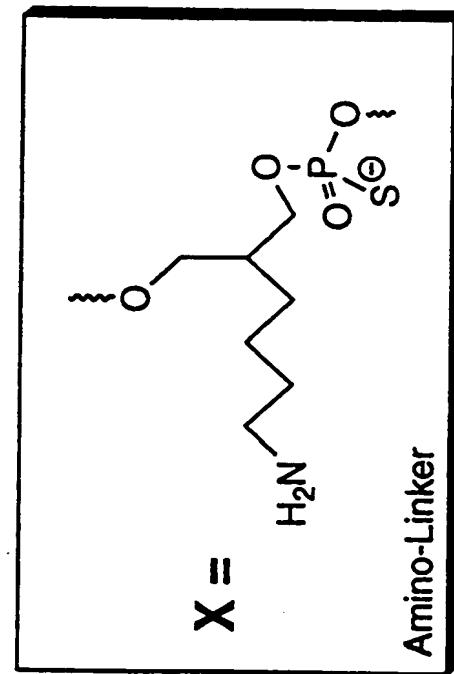


FIG. 9A

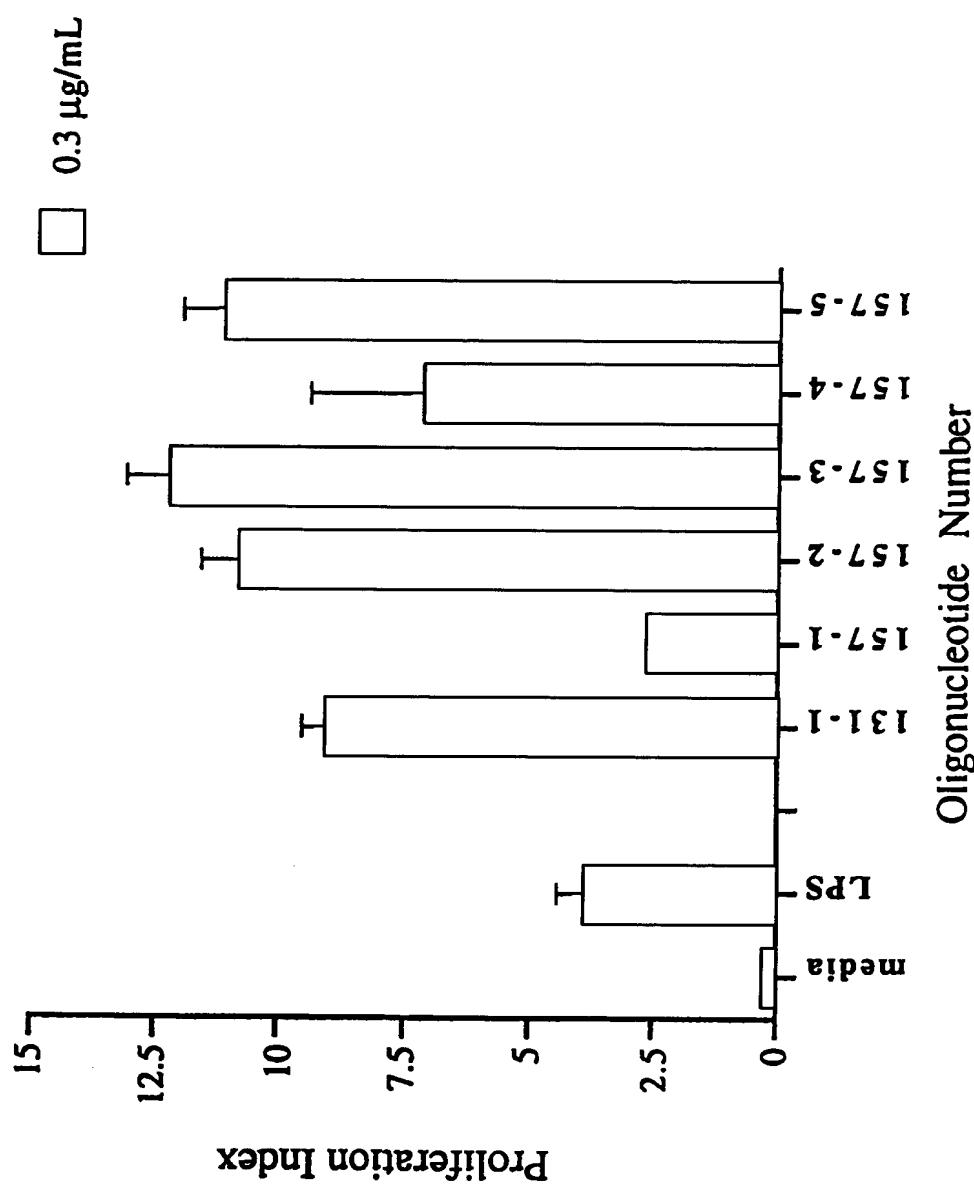


FIG. 9B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGACGGTCTCTGT-3' (131-1)
SEQ ID NO.: 43	5'-CTATCTGXCGTTCTCTGT-3' (157-1)
SEQ ID NO.: 44	5'-CTATCTXACGTTCTCTGT-3' (157-2)
SEQ ID NO.: 45	5'-CTAXCTGACGGTCTCTGT-3' (157-3)
SEQ ID NO.: 46	5'-CTATCTGACGTXCTCTGT-3' (157-4)
SEQ ID NO.: 47	5'-CTATCTGACGGTTCXCTGT-3' (157-5)

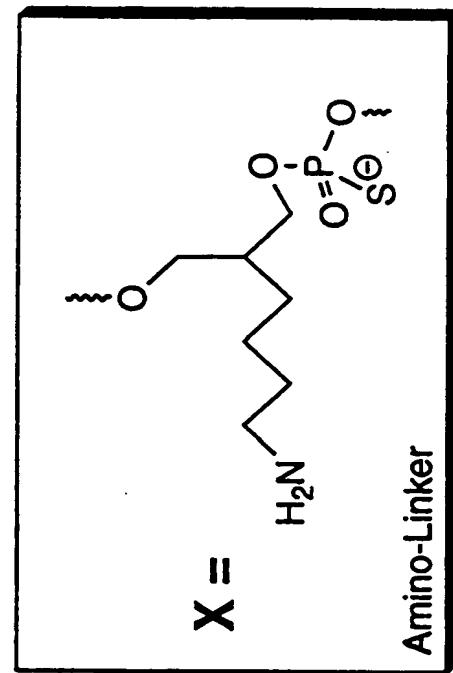


FIG. 10A

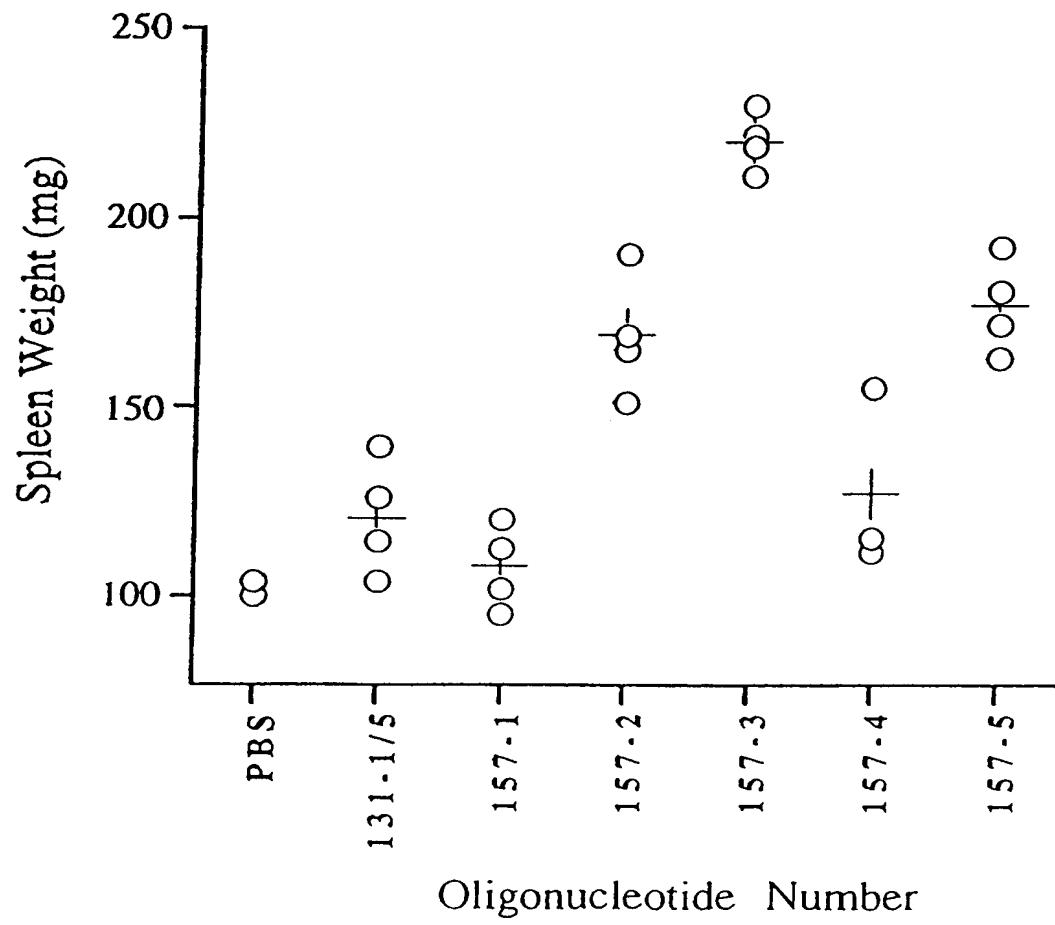
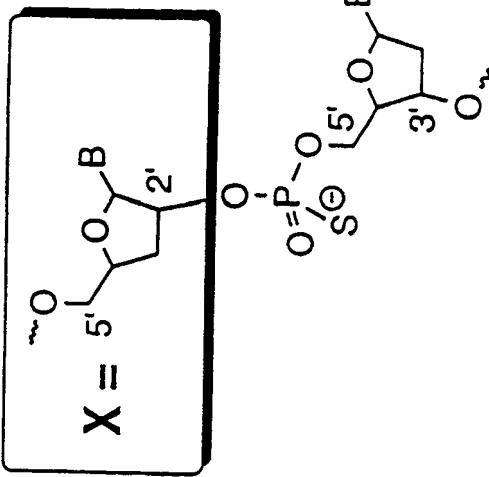


FIG. 10B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 48 159-1	5'-CTATCTGACXTTCTCTGT-3'
SEQ ID NO.: 49 159-2	5'-CTATCTGAXGTTCTCTGT-3'
SEQ ID NO.: 50 159-3	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 51 159-4	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 8 133-1	5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 52 161-1	5'-CCTACTAGCXTTCTCATC-3'
SEQ ID NO.: 53 161-2	5'-CCTACTAGXGTTCTCATC-3'
SEQ ID NO.: 54 161-3	5'-CCTACTAXCGTTCTCATC-3'
SEQ ID NO.: 55 161-4	5'-CCTAXTAGCGTTCTCATC-3'
SEQ ID NO.: 56 161-5	5'-CCTACTAGCGTTCTXATC-3'

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3'-Deoxymucleoside

FIG. 11A

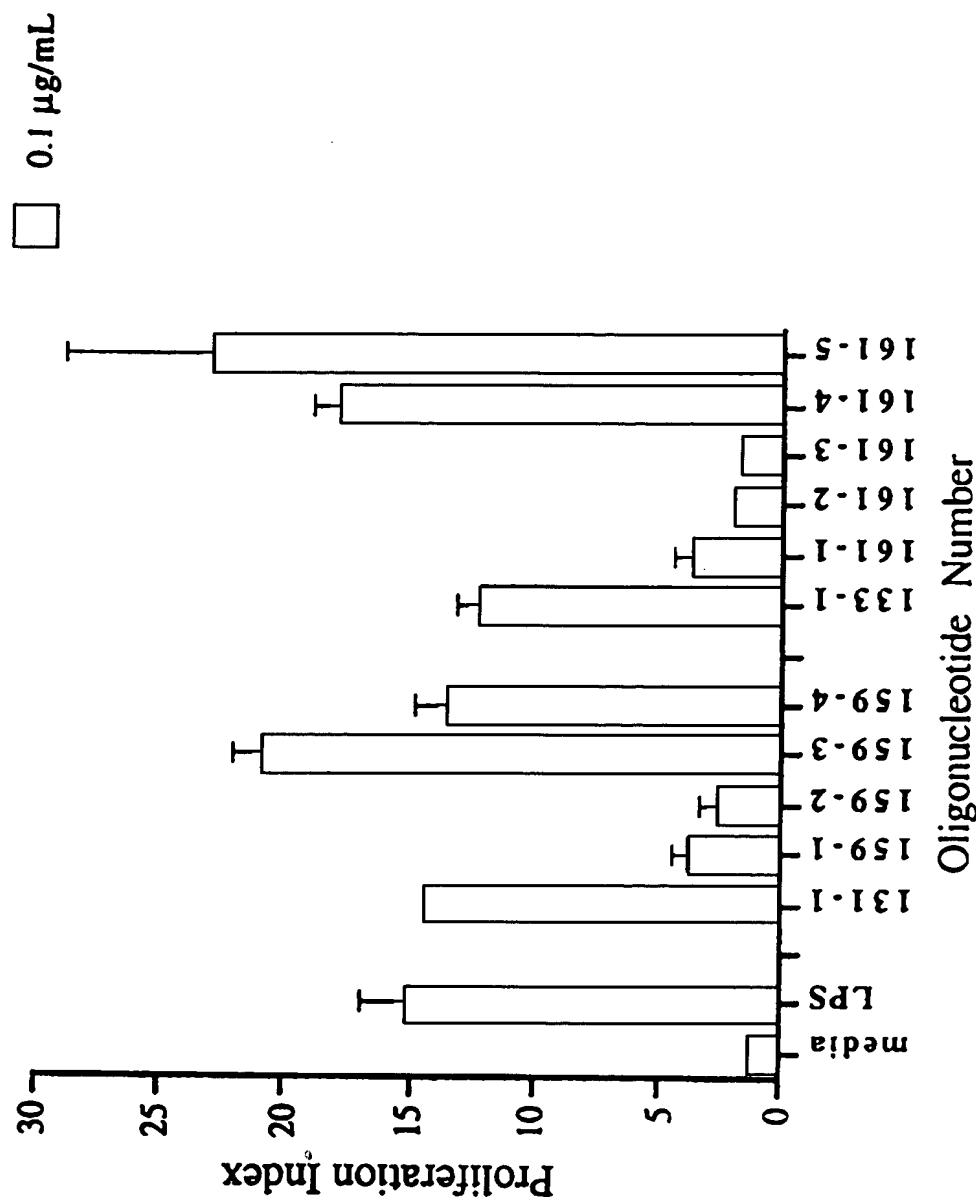
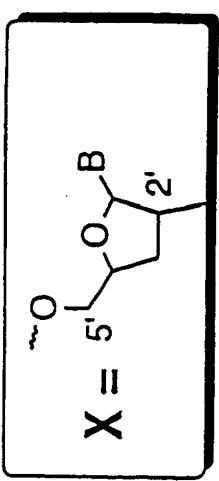


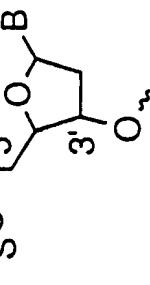
FIG. 11B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 48 159-1	5'-CTATCTGACXTTCTCTGT-3'
SEQ ID NO.: 49 159-2	5'-CTATCTGAXGTTCTCTGT-3'
SEQ ID NO.: 50 159-3	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 51 159-4	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 8 133-1	5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 52 161-1	5'-CCTACTAGCXTTCTCATC-3'
SEQ ID NO.: 53 161-2	5'-CCTACTAGXGTTCTCATC-3'
SEQ ID NO.: 54 161-3	5'-CCTACTAXCGTTCTCATC-3'
SEQ ID NO.: 55 161-4	5'-CCTAXTAGCGTTCTCATC-3'
SEQ ID NO.: 56 161-5	5'-CCTACTAGCGTTCTXATC-3'



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3'-Deoxynucleoside

FIG. 12A

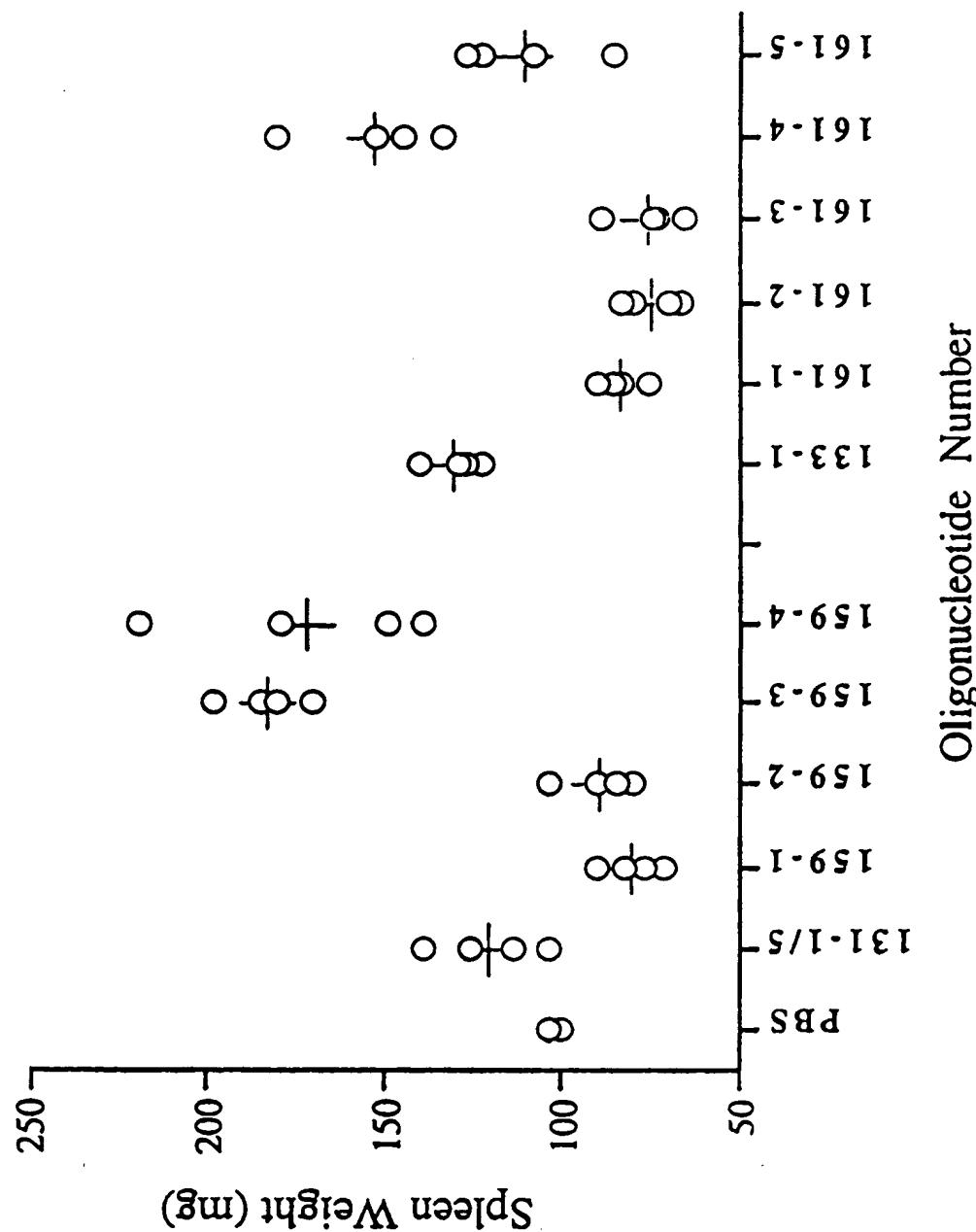


FIG. 12B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

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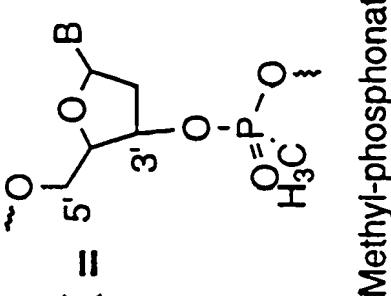
Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 57 167-1	5'-CTATCTGXCACGTTCTCTGT-3'
SEQ ID NO.: 58 167-2	5'-CTATCTXACGTTCTCTGT-3' 
SEQ ID NO.: 59 167-3	5'-CTATCXGACGTTCTCTGT-3'
SEQ ID NO.: 60 167-4	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 61 167-5	5'-CTAXCTGACGTTCTCTGT-3'
SEQ ID NO.: 62 167-6	5'-CTXXCTGACGTTCTCTGT-3'
SEQ ID NO.: 63 167-7	5'-CTATCTGACGXCTCTGT-3'
SEQ ID NO.: 64 167-8	5'-CTATCTGACGTXCTCTGT-3'
SEQ ID NO.: 65 167-9	5'-CTATCTGACGTTXTCTGT-3'
SEQ ID NO.: 66 167-10	5'-CTATCTGACGTTCXCTGT-3'
SEQ ID NO.: 67 16711	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 68 167-12	5'-CTATCTGACGTTCTXXGT-3'

FIG. 13A

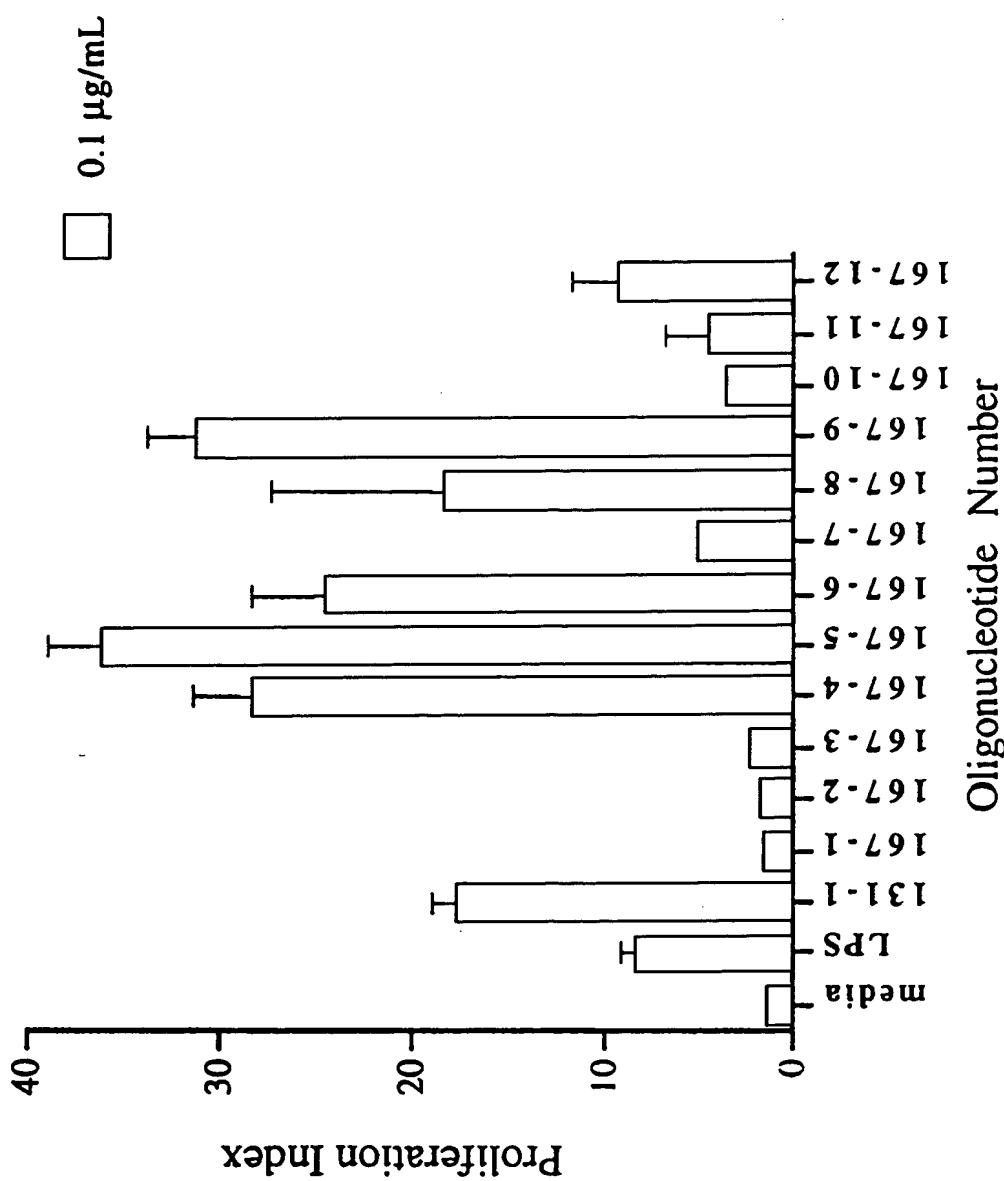
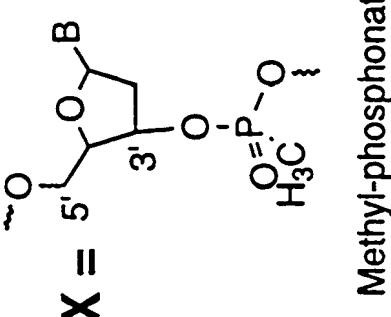


FIG. 13B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 57 167-1	5'-CTATCTGXCGTTCTCTGT-3'
SEQ ID NO.: 58 167-2	5'-CTATCTXACGTTCTCTGT-3' X = 
SEQ ID NO.: 59 167-3	5'-CTATCXGACGTTCTCTGT-3'
SEQ ID NO.: 60 167-4	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 61 167-5	5'-CTAXCTGACGTTCTCTGT-3'
SEQ ID NO.: 62 167-6	5'-CTXXCTGACGTTCTCTGT-3'
SEQ ID NO.: 63 167-7	5'-CTATCTGACGXCTCTGT-3'
SEQ ID NO.: 64 167-8	5'-CTATCTGACGTXCTCTGT-3'
SEQ ID NO.: 65 167-9	5'-CTATCTGACGTTXTCTGT-3'
SEQ ID NO.: 66 167-10	5'-CTATCTGACGTTCXCTGT-3'
SEQ ID NO.: 67 16711	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 68 167-12	5'-CTATCTGACGTTCTXXGT-3'

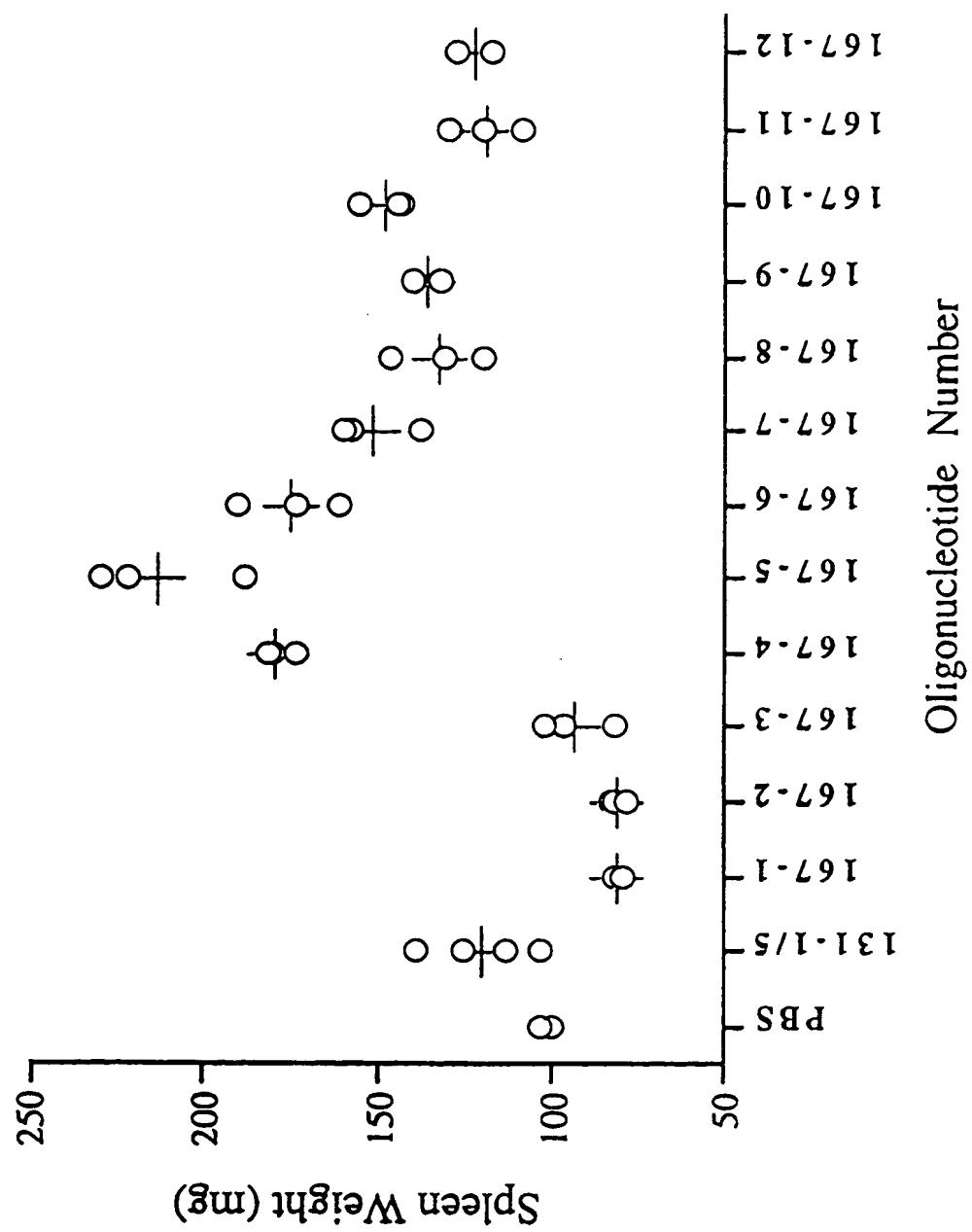
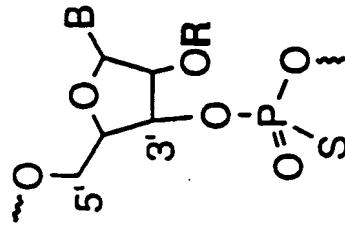


FIG. 14B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

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Oligo No.	Sequence & Modification
SEQ ID NO.: 69	113-1
	5'-TC <sup>x</sup> CATGACGTTCCCTGATGC-3'
SEQ ID NO.: 70	23-1
	5'-TCC <sup>x</sup> CATGXCGTTCCCTGATGC-3'
SEQ ID NO.: 71	23-3
	5'-TCCAXGACGTTCCCTGATGC-3'
SEQ ID NO.: 72	29-2
	5'-TYYATGACGGTCCCTGATGC-3'



R<sub>x</sub> = 2'-O-Methylribonucleoside  
R<sub>y</sub> = 2'-O-Methoxyethoxyribonucleoside

FIG. 15A

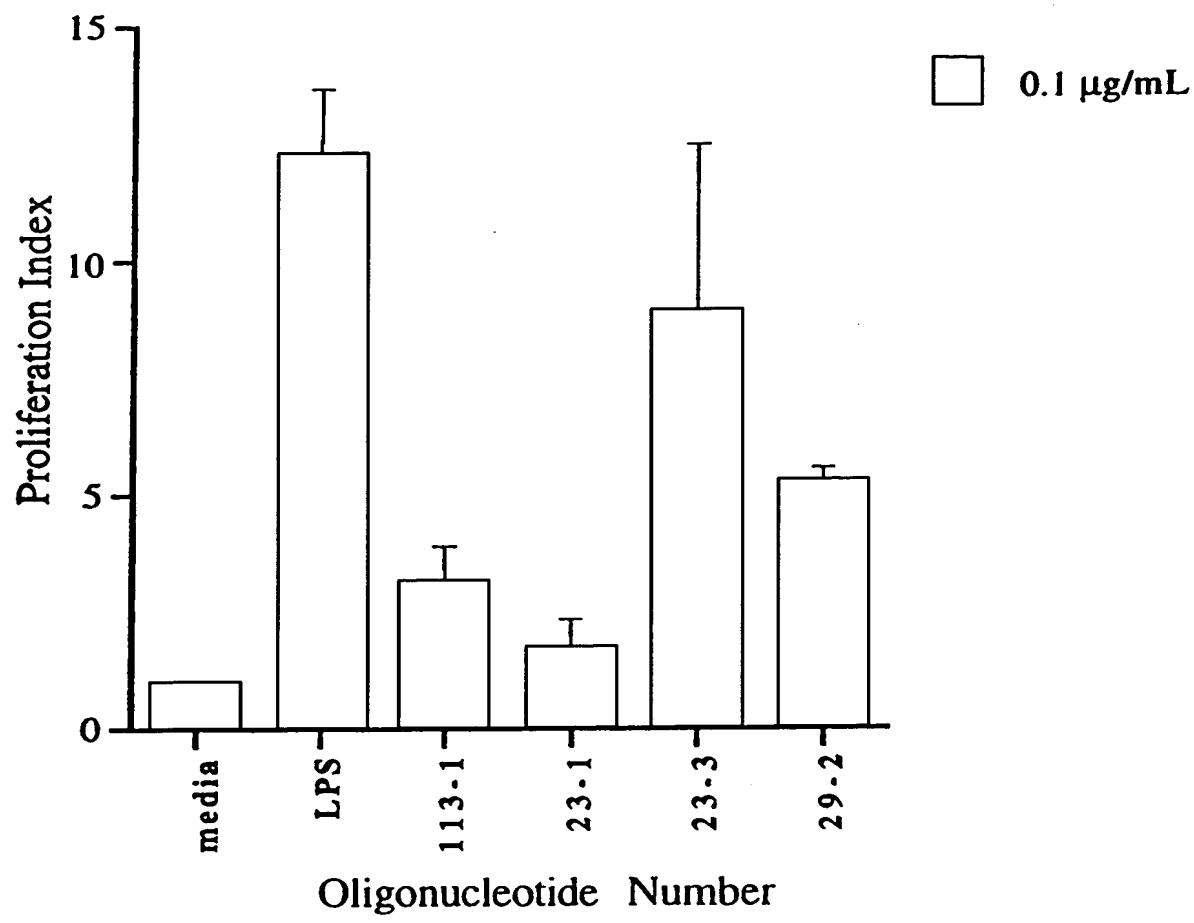
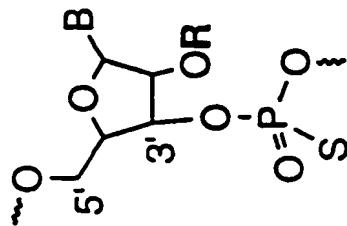


FIG. 15B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

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<i>Oligo No.</i>	<i>Sequence &amp; Modification</i>
SEQ ID NO.: 69	113-1 5'-TCCATGACGTTCCCTGATGC-3'
SEQ ID NO.: 70	23-1 5'-TCCATGXCGTTCCCTGATGC-3'
SEQ ID NO.: 71	23-3 5'-TCCAXGACGTTCCCTGATGC-3'
SEQ ID NO.: 72	29-2 5'-TYYATGACGGTCCCTGATGC-3'



$R_x = 2'$ -O-Methylribonucleoside

$R_y = 2'$ -O-Methoxyethoxyribonucleoside

FIG. 16A

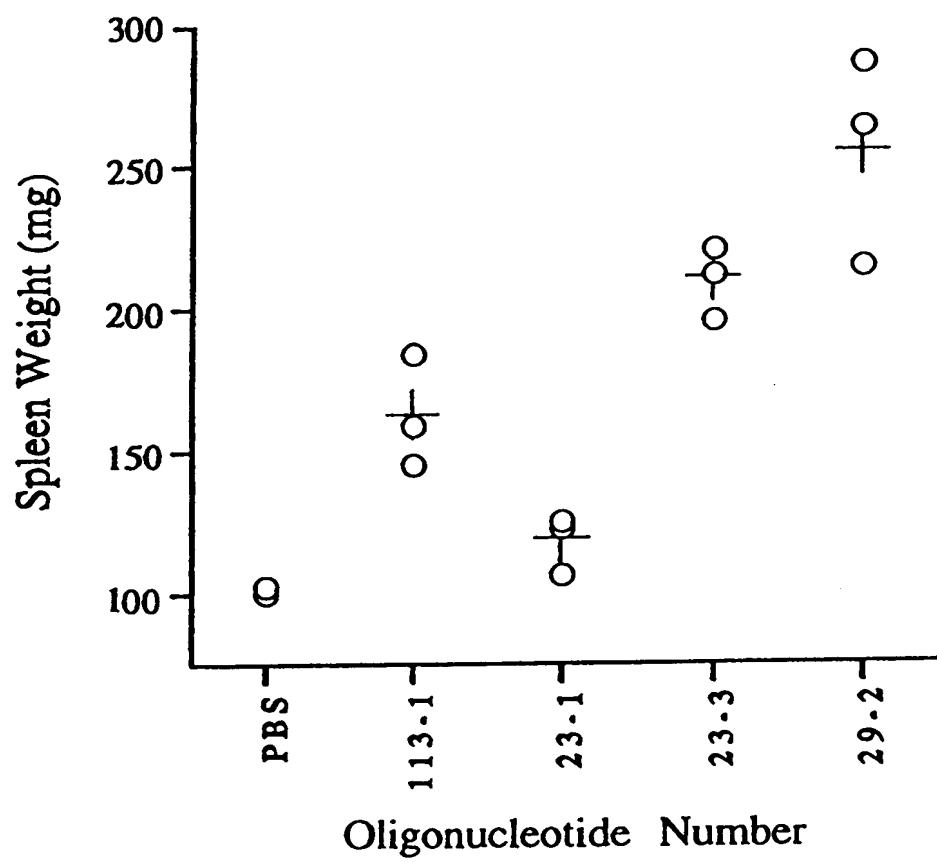


FIG. 16B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 73 1	5'-G A G A A C G C T C G A C C T T-3' 5'-G A G A A C G C T C G A C C T T-3' 5'-G A G A A C G C T C G A C C T T-3'
SEQ ID NO.: 74 2	5'-G A G A A C G C T C G A C C T T-3' 3'-T T C C A G C T C G C A A G A G-5'
SEQ ID NO.: 75 3	5'-G A G A A C G C T C G A C C T T-3' 3'-T T C C A G C T C G C A A G A G-5'
SEQ ID NO.: 76 4	5'-G A G A A C G C T C G A C C T T-3' 3'-T T C C A G C T C G C A A G A G-5'
SEQ ID NO.: 77 5	5'-T C T C C C A G C G T G C G C C A T-3'
SEQ ID NO.: 78 6	5'-T C C C A G C G T G C G C C A T-3' 3'-T A C C G C G T G C G A C C C T-5'
SEQ ID NO.: 79 7	5'-T C C C A G C G T G C G C C A T-3' 3'-T A C C G C G T G C G A C C C T-5'
SEQ ID NO.: 80 8	5'-T A C C G C G T G C G A C C C T-5'

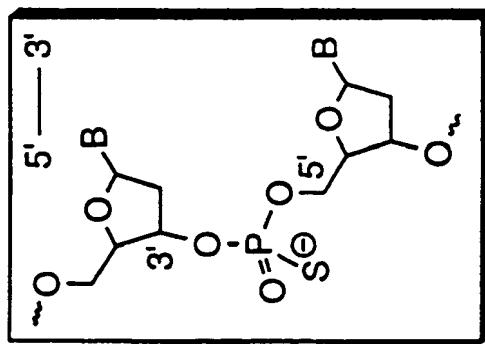
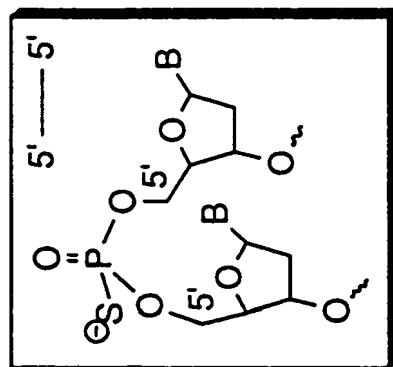
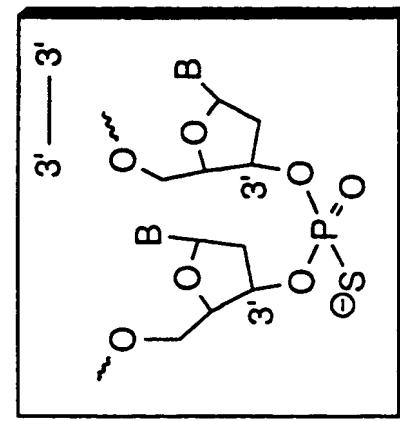


FIG. 17B

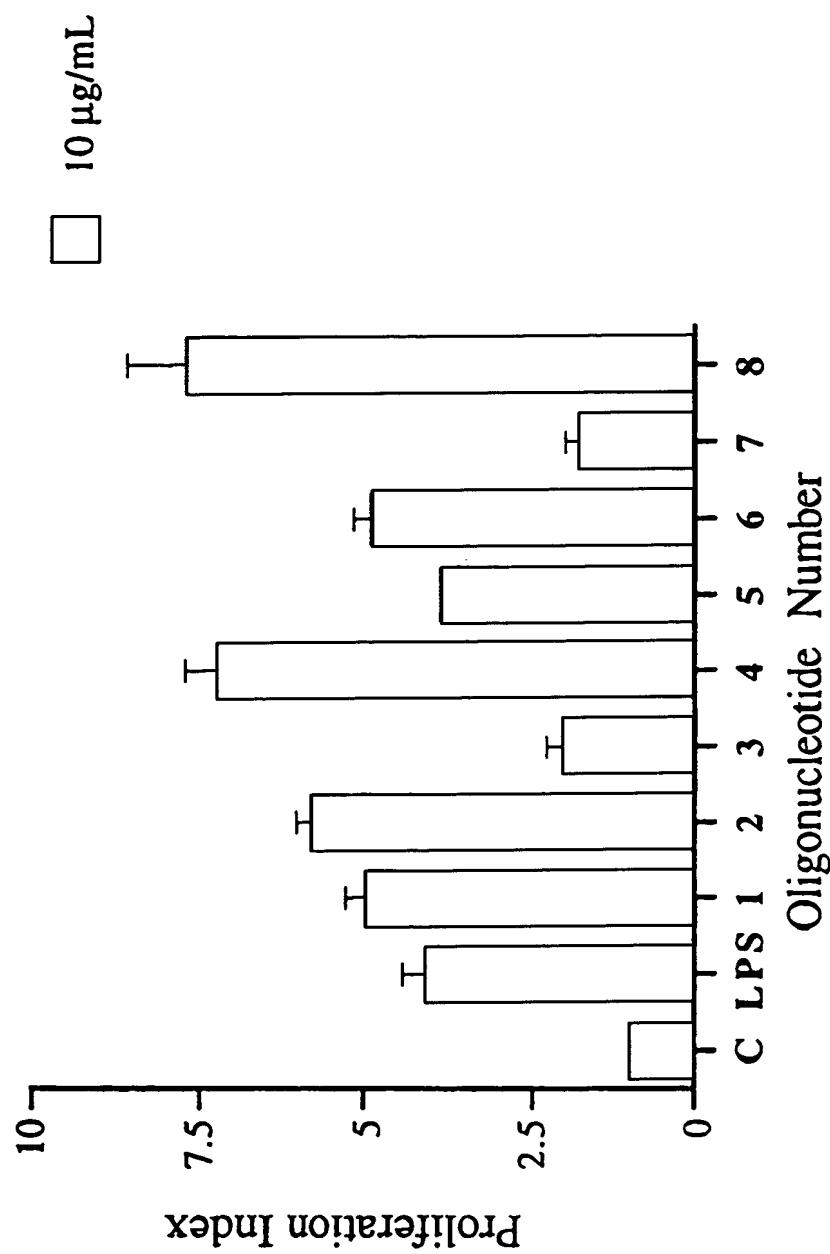
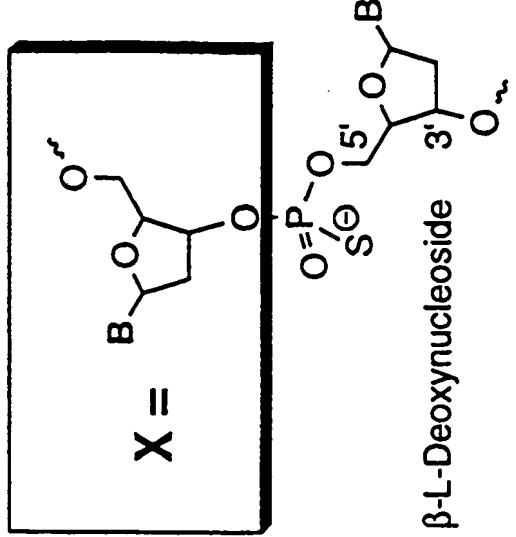


FIG. 17C

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3' 5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 81 175-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 82 175-2	5'-CTAXXTGACGTTCTCTGT-3'
SEQ ID NO.: 83 175-3	5'-CTATCTGACGTTCTCTGT-3' 5'-CTATCTGAXXXTCTCTGT-3'
SEQ ID NO.: 84 175-4	5'-CTATCTXACGTTCTCTGT-3'
SEQ ID NO.: 85 175-5	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 86 175-6	β-L-Deoxy nucleoside
SEQ ID NO.: 87 175-7	5'-CTATCTGACGTXCTCTGT-3'
SEQ ID NO.: 88 175-9	5'-CTATCTGACGTTCTCTGT-3' (all-β-L-DNA/PS)

FIG. 18A



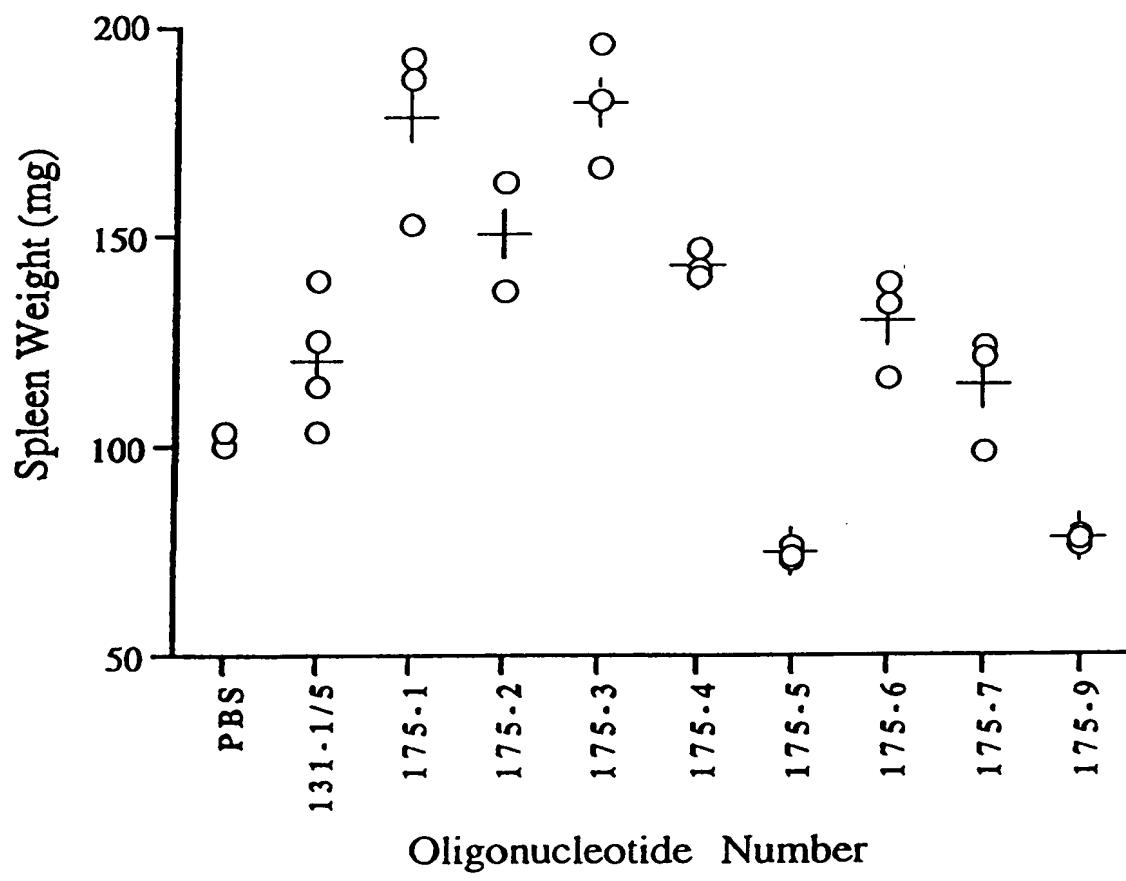


FIG. 18B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'  $X = \begin{array}{c} \sim O \\   \\ 5' - C - O - Y \\   \\ 3' - C - O - O - C - \text{CH} \\   \\ O - P - O - \text{S} \end{array}$
SEQ ID NO.: 89 173-1	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 90 173-2	5'-CTATCTGACGTTCTXTGT-3'

2'-O-Propargyl-ribonucleoside

FIG. 19A

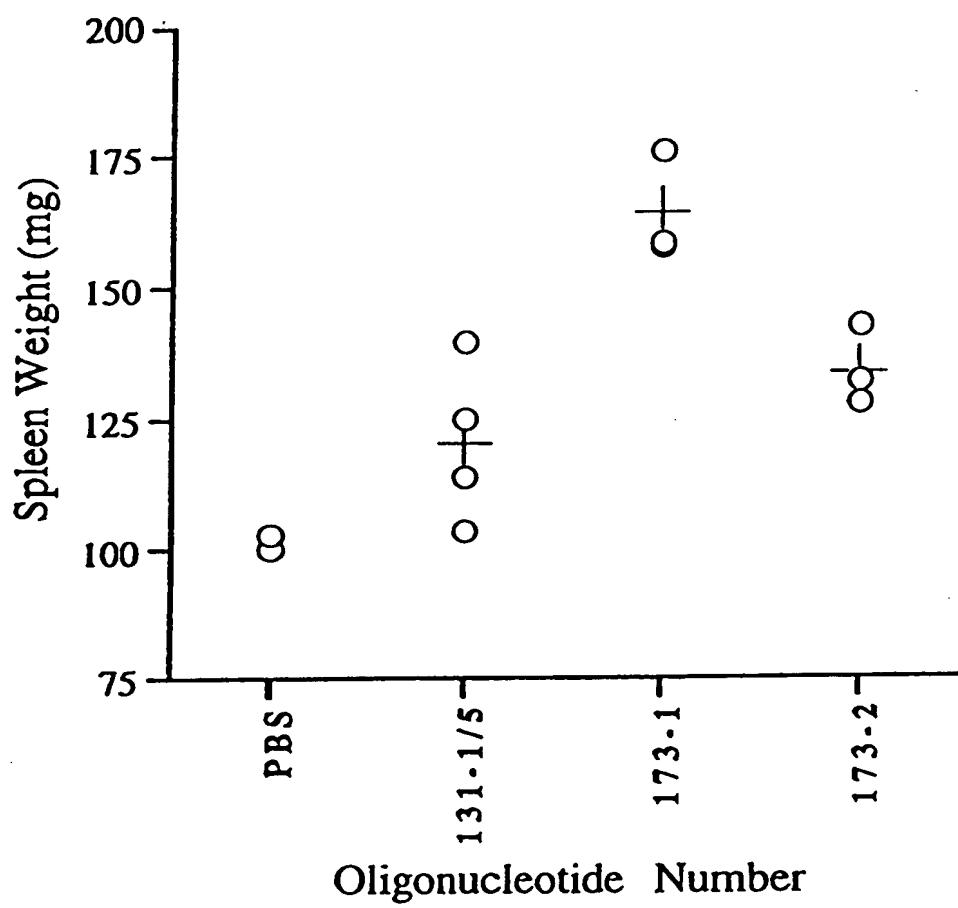


FIG. 19B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 8	133-1 5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 91	143-1 5'-CCTXTAGCGTTCTCATC-3'
SEQ ID NO.: 92	143-2 5'-CCTYTAGCGTTCTCATC-3'
SEQ ID NO.: 93	143-3 5'-CCTZTAGCGTTCTCATC-3'
SEQ ID NO.: 94	143-4 5'-CCTXTAGCGTVCTCATC-3'
SEQ ID NO.: 95	143-5 5'-CCTACTAG <u>G</u> TTCTCATC-3'

X = 1',2'-Dideoxyribose

Y = C3-Linker

Z = 3'-OMe

V = 2'-OMe

FIG. 20A

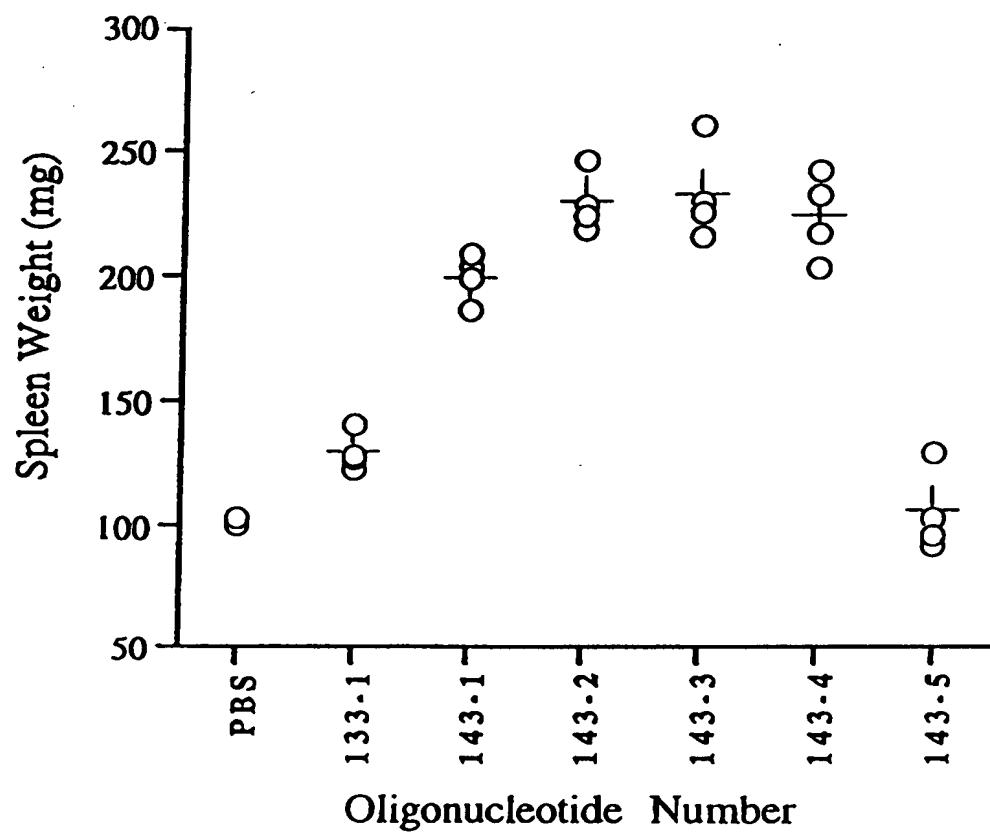


FIG. 20B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND  
MODIFICATION OF LINKAGES

<i>Oligo No.</i>	<i>Sequence &amp; Modification</i>
SEQ ID NO.: 1 1	5'-CTATCTGAC <u>G</u> TTCTCTGT-3' (131-1)
SEQ ID NO.: 96 2	5'-CTATCTGAC <u>G*</u> TTCTCTGT-3' (E 633L)
SEQ ID NO.: 97 3	5'-CTATCTGAG <u>G*</u> TTCTCTGT-3' (E 636)
SEQ ID NO.: 98 4	5'-TCTCCCAG <u>GCG*</u> TGCG*CCAT-3'
SEQ ID NO.: 99 5	5'-TCTCCCAG <u>GCG*</u> TGCG*CCAT-3' (E 603)
SEQ ID NO.: 100 6	5'-CTATXTGAC <u>G*</u> TTCTCTGT-3' (E 639L)

FIG. 21A

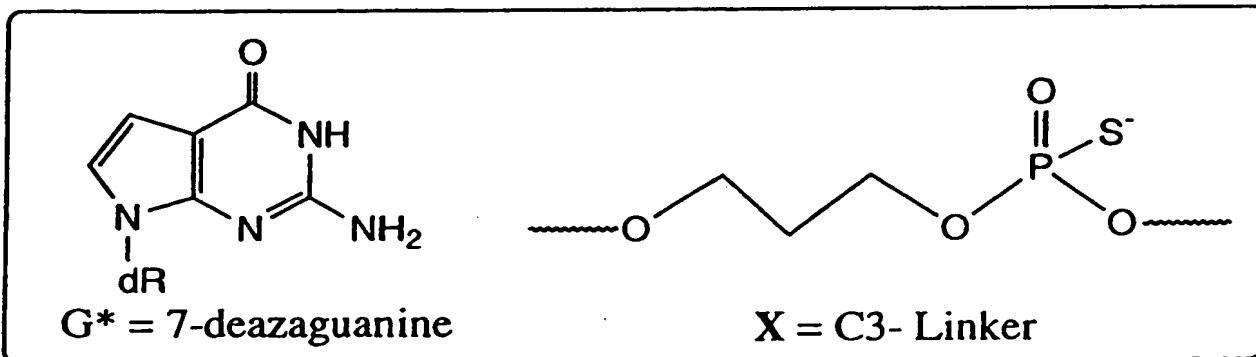


FIG. 21B

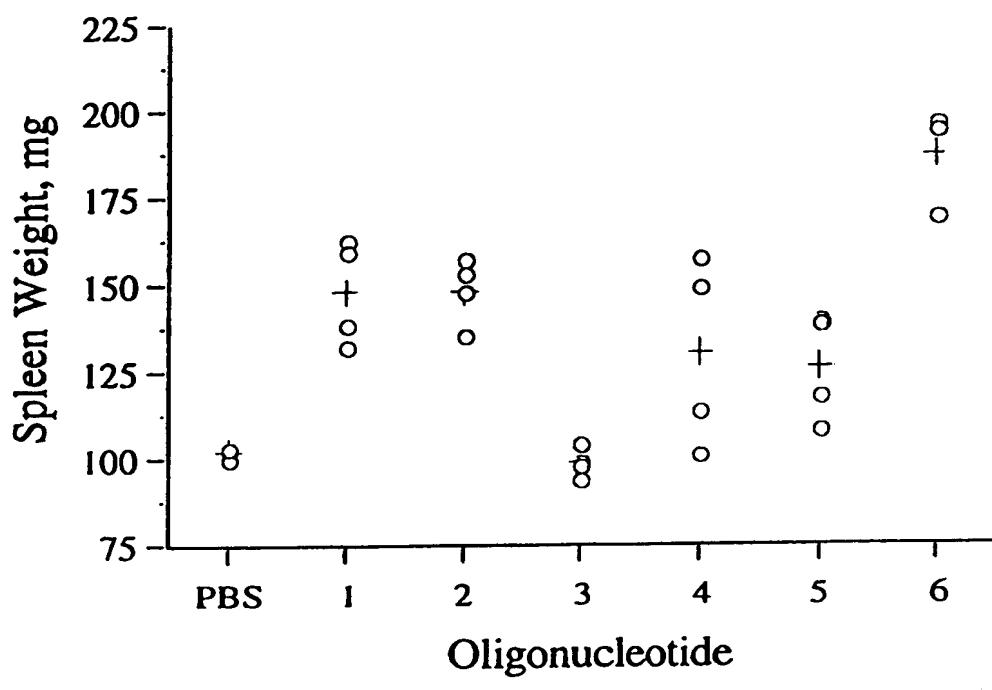


FIG. 21C

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
SEQ ID NO.: 1	5'-CTATCTGAC <u>G</u> GTCTCTGT-3' (131-1)
SEQ ID NO.: 101	5'-CTATCTGAC <u>G*</u> TTCTCTGT-3' (E 682)
SEQ ID NO.: 102	5'-CTATCTGAG <u>G*</u> CTTCTCTGT-3' (E 683)

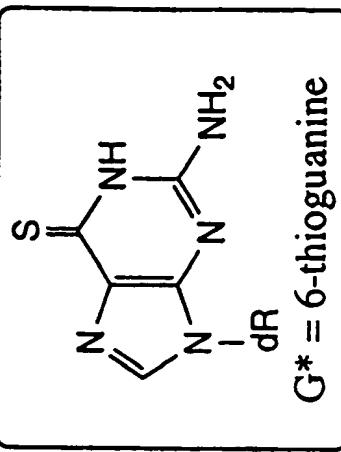


FIG. 22A

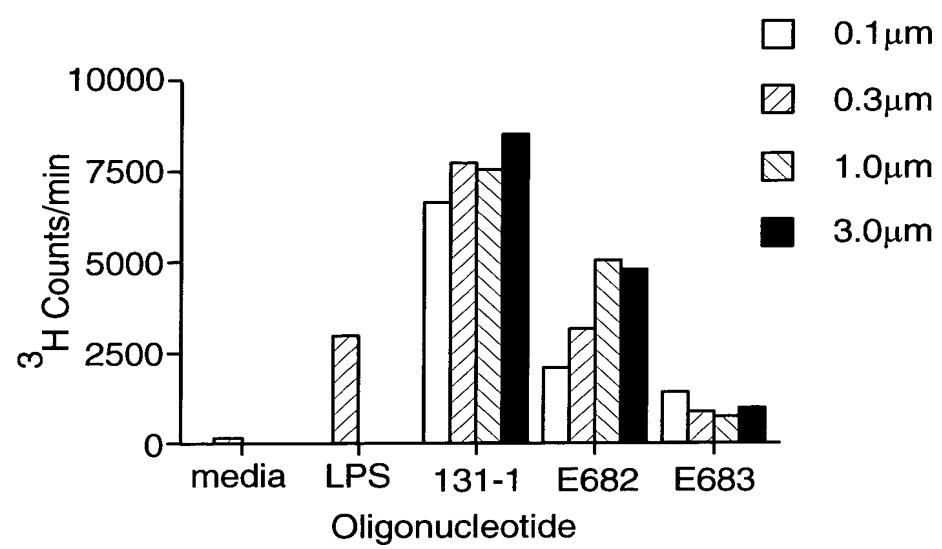


FIG. 22B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

*Oligo No. Sequence & Modification*

SEQ ID NO.: 1 1 5'-CTATCTGACGGTCTCTGT-3'  
 SEQ ID NO.: 2 2 5'-CTATCTGACGTTCTCTGT-3'  
 SEQ ID NO.: 3 3 5'-CTATCTGACCC\*TTCTCTGT-3'  
 SEQ ID NO.: 4 4 5'-CTATCTGAC\*\*GTTCTCTGT-3'  
 SEQ ID NO.: 5 5 5'-CTATCTGACCC\*TTCTCTGT-3'

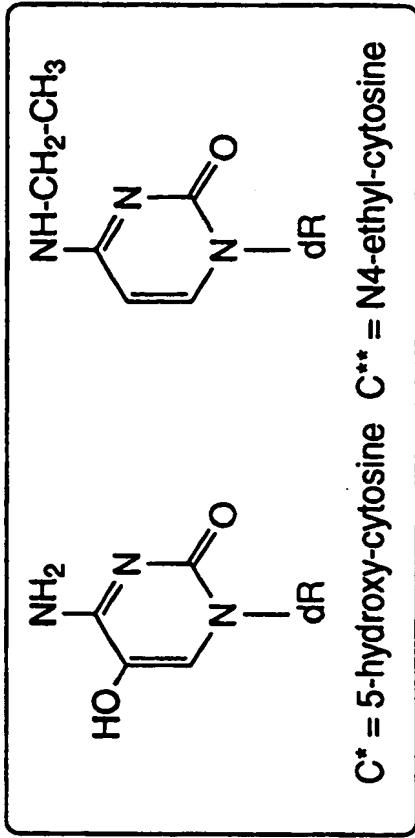


FIG. 23A

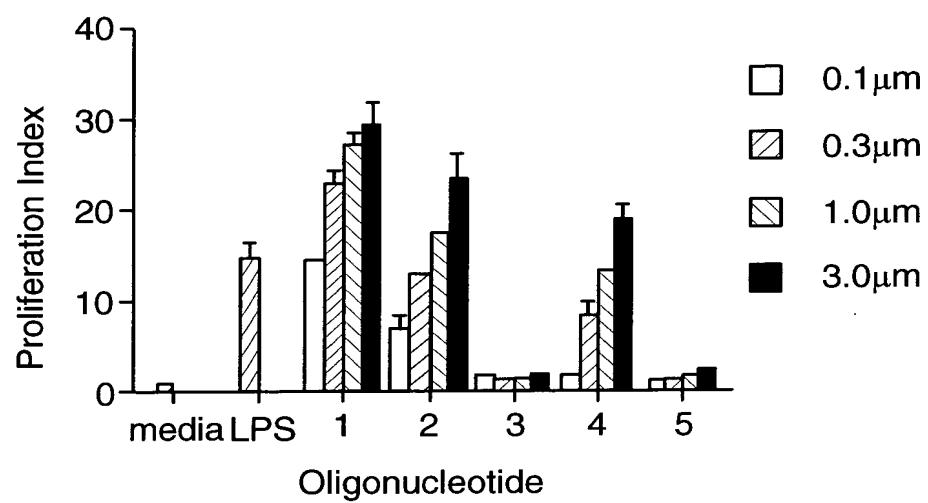


FIG. 23B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

## Oligo No. Sequence &amp; Modification

SEQ ID NO.: 1 1 5'-CTATCTGACGGTCTCTGT-3'  
 SEQ ID NO.: 2 2 5'-CTATCTGAC\*GTCTCTGT-3'  
 SEQ ID NO.: 3 3 5'-CTATCTGACCCTCTGT-3'  
 SEQ ID NO.: 4 4 5'-CTATCTGAC\*GTCTCTGT-3'  
 SEQ ID NO.: 5 5 5'-CTATCTGACCCTCTGT-3'  
 C\* = 5-hydroxy-cytosine C\*\* = N4-ethyl-cytosine

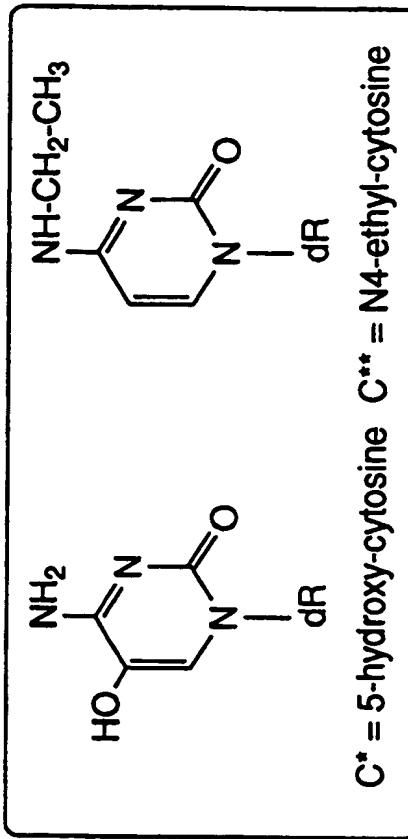


FIG. 24A

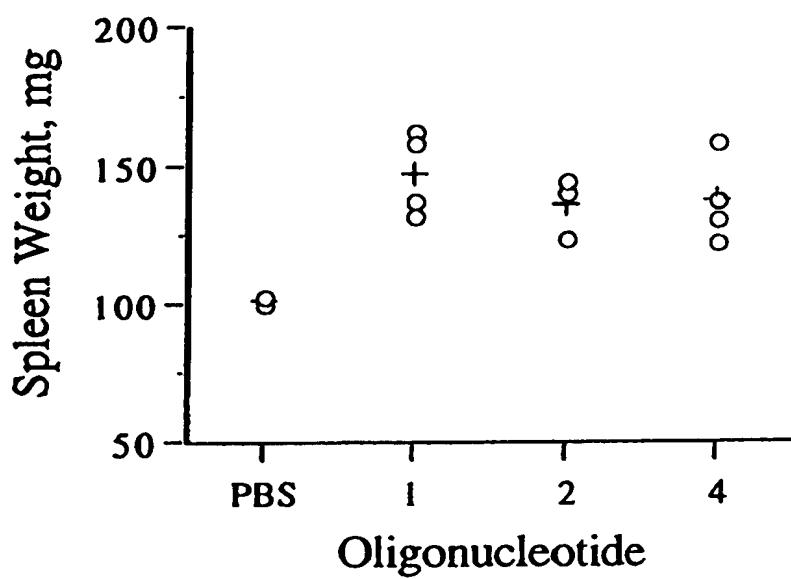
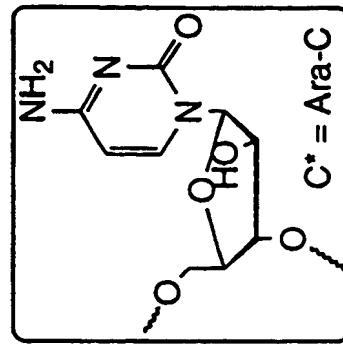


FIG. 24B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No. *Sequence & Modification*

SEQ ID NO.: 1	1	5'-CTATCTGAC <u>GGT</u> TCTGTGT-3'
SEQ ID NO.: 111	2	5'-CTATCTGAC <u>GAC*</u> GTCTGTGT-3'
SEQ ID NO.: 112	3	5'-CTATCTGAC <u>CC*</u> TTCTGTGT-3'

FIG. 25A

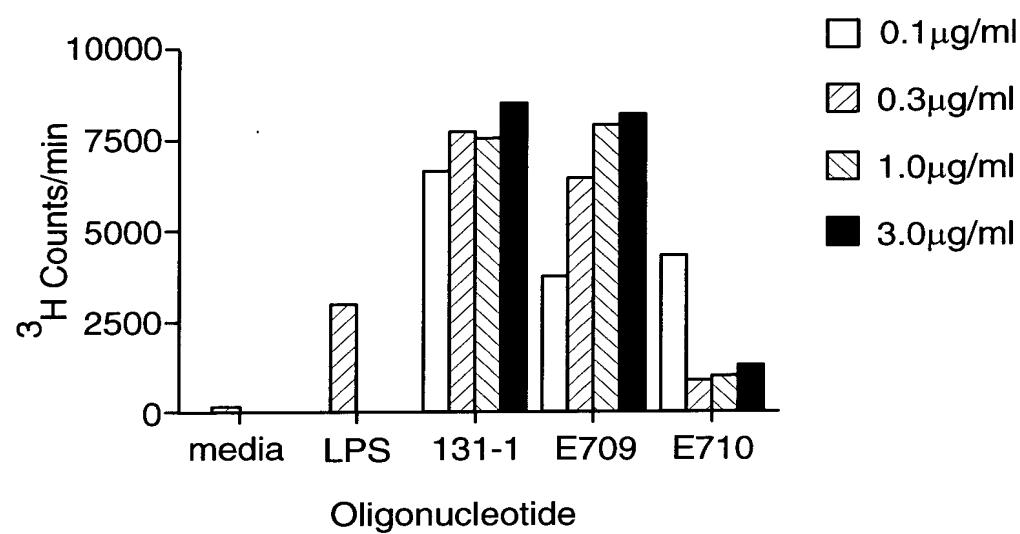
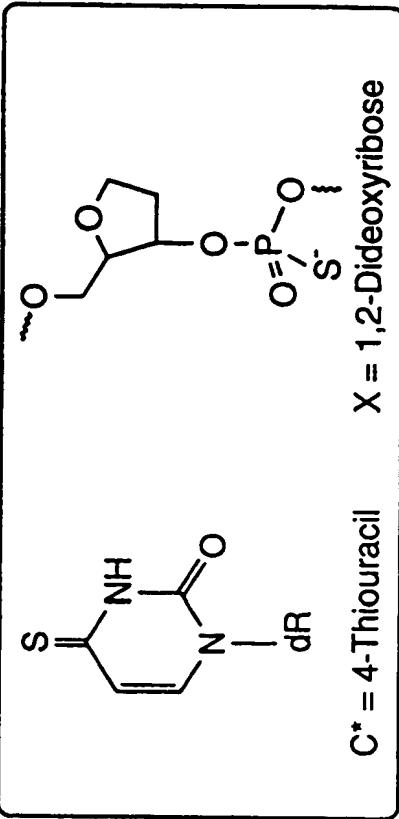


FIG. 25B

## OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No. Sequence & Modification

SEQ ID NO.:	1	1	5'-CTATCTGAC <u>GT</u> TCTGTGT-3' (131-1)
SEQ ID NO.:	103	2	5'-CTATCTGAC* <u>GT</u> TCTGTGT-3' (E 647)
SEQ ID NO.:	104	3	5'-CTATXTGAC* <u>GT</u> TCTGTGT-3' (E 653)

FIG. 26A

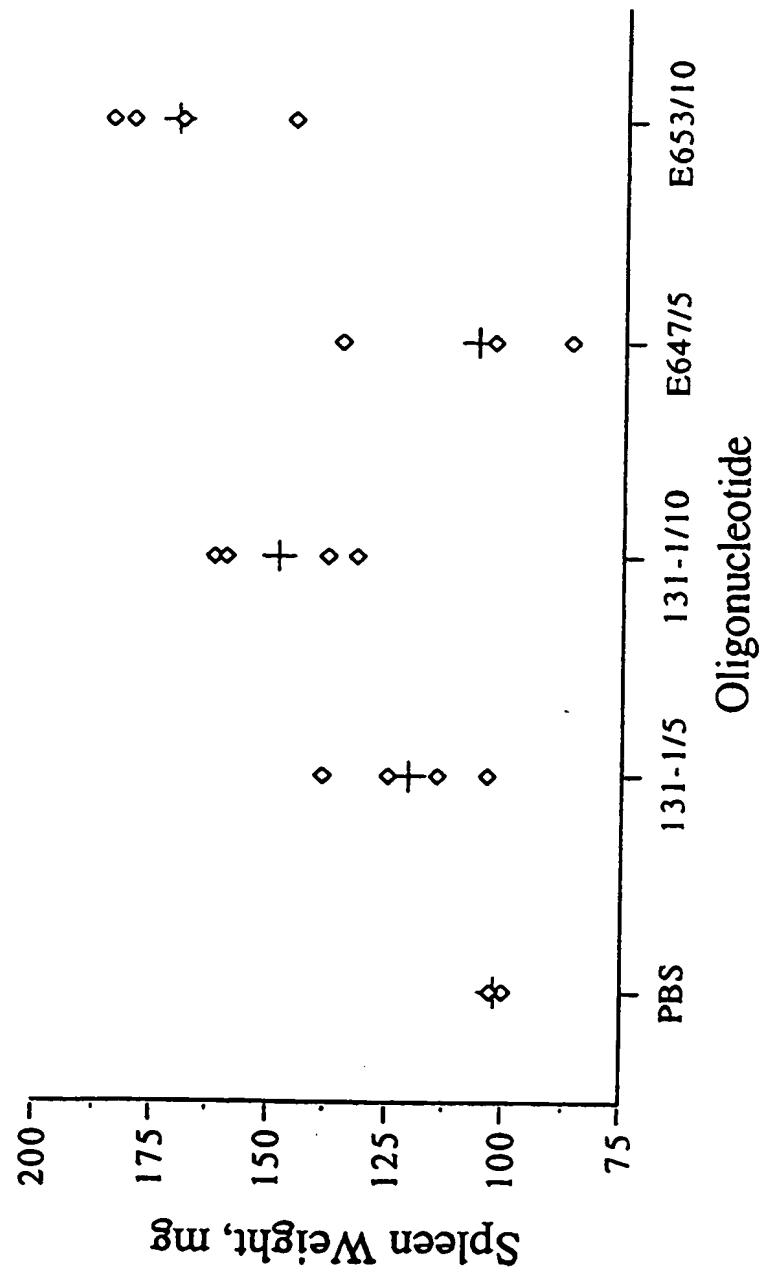


FIG. 26B

53/53

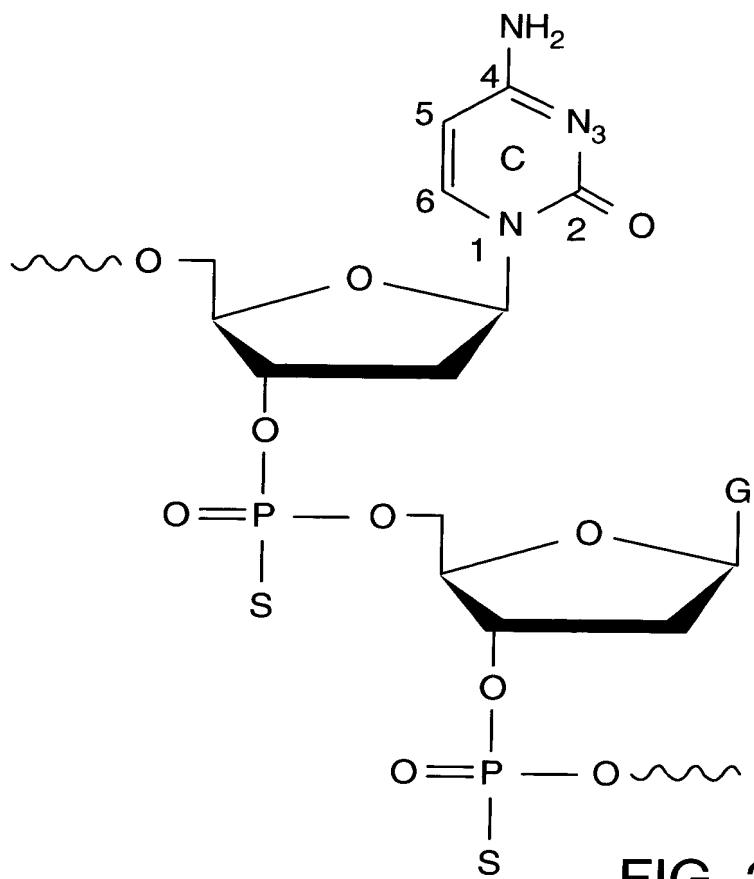


FIG. 27

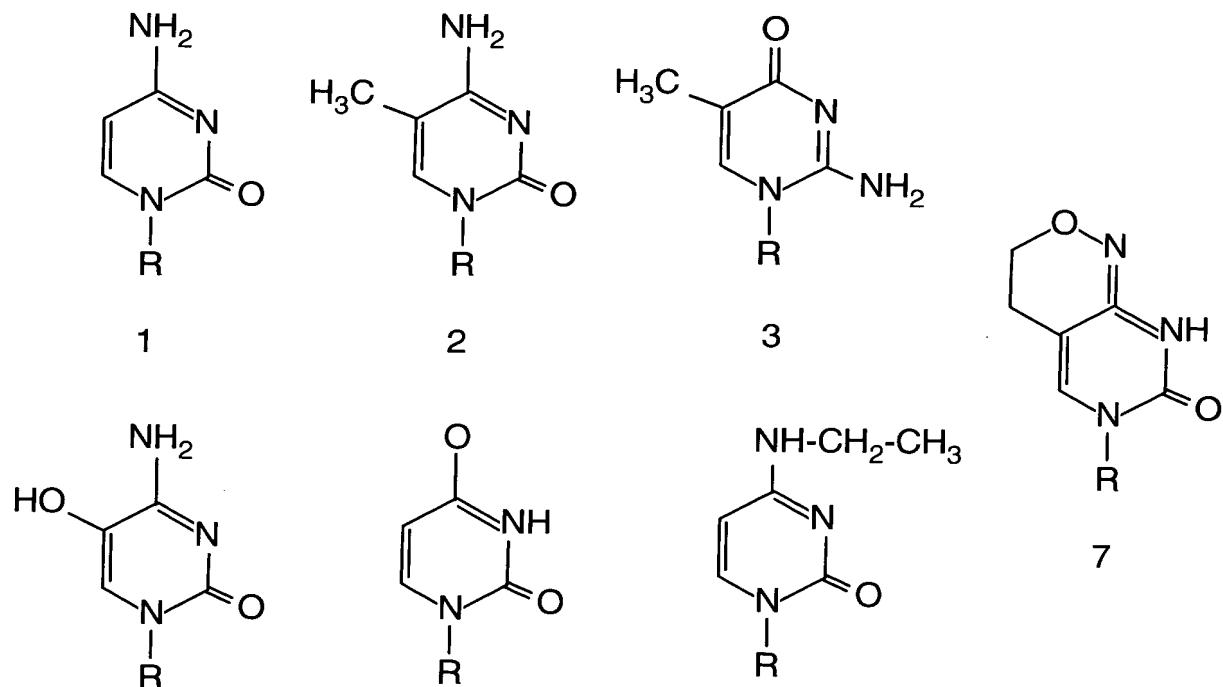


FIG. 28